Cassette Deck

# Service Manu

**Dolby NR-Equipped** Stereo Double Cassette Deck **RS-X102** 

#### Color

(K)...Black Type

#### Area

mou		
Country Code	Area	Color
(E)	Continental Europe.	
(EB)	Great Britain.	
(EG)	F.R. Germany and Italy.	
(GC)	Asia, Latin America, Middle Near East and Africa.	(K)
(GN)	Oceania.	

## **DOLBY SYSTEM**



#### **MECHANISM SERIES (AR300)**

#### SPECIFICATIONS

#### CASSETTE DECK SECTION

Deck system Stereo cassette deck Track system 4-track, 2-channel Heads

(tape deck 2) rec/play Permalloy head Double-gap ferrite head erasing (tape deck 1) play Permalloy head

Motors

(tape deck 2) Capstan/reel table drive DC servo motor (tape deck 1) Capstan/reel table drive DC servo motor Recording system AC bias Bias frequency 80 kHz **Erasing system** AC erase Tape speeds 4.8 cm/sec. (1-7/8 ips)

Frequency response (w/o Dolby NR)

NORMAL 30 Hz~16 kHz 40 Hz~15 kHz (DIN) CrO<sub>2</sub> 30 Hz~16 kHz 40 Hz~15 kHz (DIN)

METAL 30 Hz~18 kHz 40 Hz~17 kHz (DIN)

S/N (signal level = max recording level, CrO<sub>2</sub> type tape)

Dolby B NR ON 66 dB (CCIR) Dolby NR OFF 56 dB (A weighted)

Wow and flutter 0.1 % (WRMS)

Fast forward and rewind times

Approx. 110 seconds with C-60 cassette tape

Input sensitivity and impedance

LINE 60 mV/47 kQ

Output voltage and impedance

LINE 400 mV/800 Ω

#### **GENERAL**

Power consumption 15 W Dimensions (W  $\times$  H  $\times$  D) 360 × 129 × 285 mm  $(14-3/16" \times 5-3/32" \times 11-7/32")$ Weight 3.7 kg (8.1 lb.)

Specifications are subject to change without notice. Weight and dimensions are approximate.

\* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

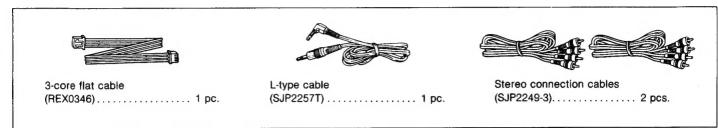
# **Technics**

#### **■ CONTENTS**

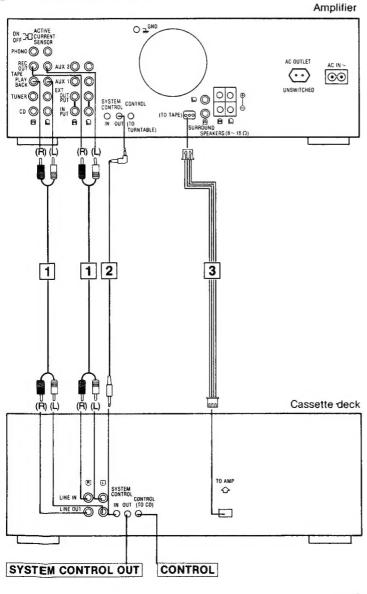
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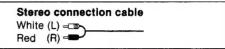
#### ACCESSORIES



#### CONNECTIONS



Make connections in the numbered sequence by using the included cables.



- 1 Connect the stereo connection cables.
- 2 Connect the L-type cable.
- 3 Connect the flat cable.

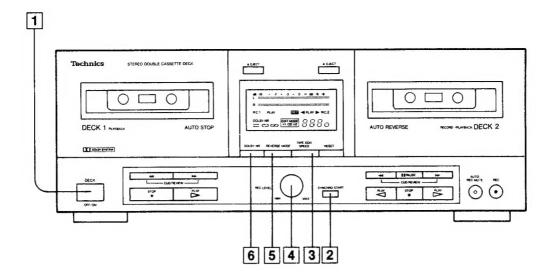
#### SYSTEM CONTROL OUT

This terminal is used to connect a Technics compact disc player or a Technics stereo graphic equalizer with the "SYSTEM CONTROL IN" terminal.

#### CONTROL

This terminal is used to connect a Technics multi-compact disc player with the "CONTROL" terminal.

#### ■ LOCATION OF CONTROLS



#### Controls common to both tape decks

#### 1 DECK ON/OFF switch (DECK)

#### 2 Synchro-start button (SYNCHRO START)

This button can be used to start a tape-to-tape recording, simultaneously starting tape deck 1 (the playback deck) and tape deck 2 (the recording deck).

## 3 Tape-to-tape recording tape-speed selector (TAPE EDIT SPEED)

This selector can be used to select the recording speed when a tape-to-tape recording is made.

#### 4 Recording-level control (REC LEVEL)

This control can be used to regulate the recording level of tape deck 2.

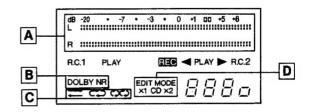
#### 5 Reverse-mode selector (REVERSE MODE)

This selector can be used for selection of the reverse mode (for either playback or recording).

#### 6 Dolby noise-reduction button (DOLBY NR)

This button is used to reduce the "hissing" noise heard from the tape.

#### Indicators common to both tape decks



#### A Input level meter

During playback, this meter indicates the level of the recorded sound source.

During recording, it indicates the level being recorded, adjusted by the recording-level control.

#### **B** Dolby noise-reduction indicator (DOLBY NR)

This indicator illuminates when the Dolby noise-reduction button is pressed.

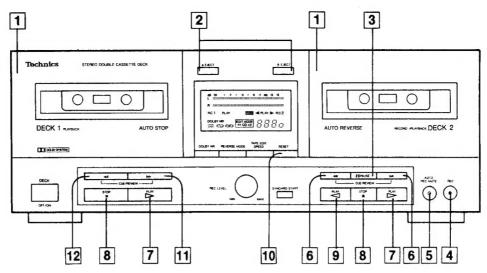
#### C Reverse-mode indicators ( ; , ; , ; , ; )

One of these indicators illuminates to show which of the reverse modes was selected by the reverse-mode selector.

## D Edit-recording indicators (EDIT MODE, CD, $\times$ 1, $\times$ 2)

The words "EDIT MODE" and "×1 (or "×2") indicator will illuminate when a tape-to-tape recording is made.

The words "EDIT MODE" and "CD" indicator will illuminate when a CD edit-recording is made.



#### Controls applicable to tape deck 1 and/or 2

- 1 Cassette holder
- 2 Eject button (▲ EJECT)

This button can be used to open the cassette holder.

#### 3 Pause button (II PAUSE)

This button can be used to temporarily stop the tape playback or recording, on tape deck 2 only.

#### 4 Record button (REC)

This button can be used to change tape deck 2 to the recording stand-by mode.

## 5 Automatic-record-muting button (AUTO REC MUTE)

This button can be used to make a silent interval on the tape during recording, on tape deck 2 only.

## 6 Fast-forward/cue, rewind/review buttons (◀◀, ▶▶)

These buttons are used to advance or rewind the tape. During playback, these buttons are used to cue or review while listening to the contents at high speed.

#### 7 Forward-side playback button (▷ PLAY)

This button can be used to start the playback or recording of side "A" of the cassette in tape deck 2 only. (The tape will then begin moving in the left-to-right direction.)

#### 8 Stop button (■ STOP)

This button can be used to stop tape movement.

#### 9 Reverse-side playback button (< PLAY)

This button can be used to start the playback or recording of side "B" of the cassette in tape deck 2 only. (The tape will then begin moving in the right-to-left direction.)

#### 10 Tape counter reset button (RESET)

This button can be used to reset the tape counter indication (for tape deck 2 only) to "000".

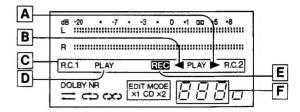
#### 11 Fast-forward/cue button (>>)

This button is used to advance the tape. During playback this button is used to cue the contents at high speed.

#### 12 Rewind/review button (◀◀)

This button is used to rewind the tape. During playback this button is used to review the contents at high speed.

#### Indicators applicable only to deck 1 or 2



#### A Forward-side indicator (▶)

This indicator illuminates during playback or recording on tape deck 2 to indicate that side "A" of the tape is being used.

#### B Reverse-side indicator (◄)

This indicator illuminates during playback or recording on tape deck 2 to indicate that side "B" of the tape is being used.

#### C Remote-control indicator (R.C.1/R.C.2)

This indicator illuminates to indicate that this tape deck can now be controlled by the remote-control transmitter (included with tuner).

#### D Playback indicator (PLAY)

When this indicator illuminates steadily, it indicates that this tape deck is in the playback mode or the recording mode (for tape deck 2 only).

When it flashes continually, this is an indication that tape deck 2 is in the pause mode or the recording stand-by mode.

#### E Recording indicator (REC)

This indicator illuminates to indicate that tape deck 2 is in the recording stand-by mode or is recording.

#### F Tape deck 2 counter

Indicates the amount of tape movement.

#### **■ DISASSEMBLY INSTRUCTIONS**

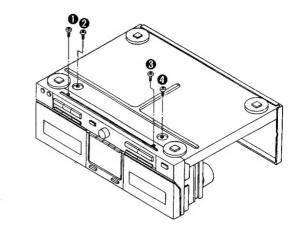
#### "ATTENTION SERVICER"

Some chassis components may have sharp edges. Be careful when disassembling and servicing.

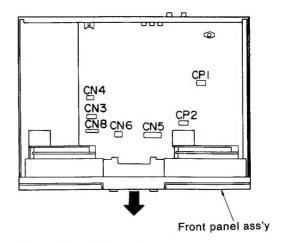
Ref. No. Removal of the cabinet **Procedure** Cabinet <sup>©</sup>⊚ Remove the 6 screws (●~6). Ref. No. Removal of the main P.C.B. **Procedure** 1→2→3 Rear panel 1. Remove the 2 screws (1, 2). Main P.C.B. 2. Remove the 5 screws (3~7).

Ref. No. 2 Removal of the front panel ass'y

Procedure 1→2



1. Remove the 4 screws (1~4).



- 2. Remove the 2 connectors (CP1, CP2).
- 3. Remove the 5 flat cables (CN3, CN4, CN5, CN6, CN8)
- 4. Remove the front panel ass'y in the direction of arrow.

#### How to remove the flat cable

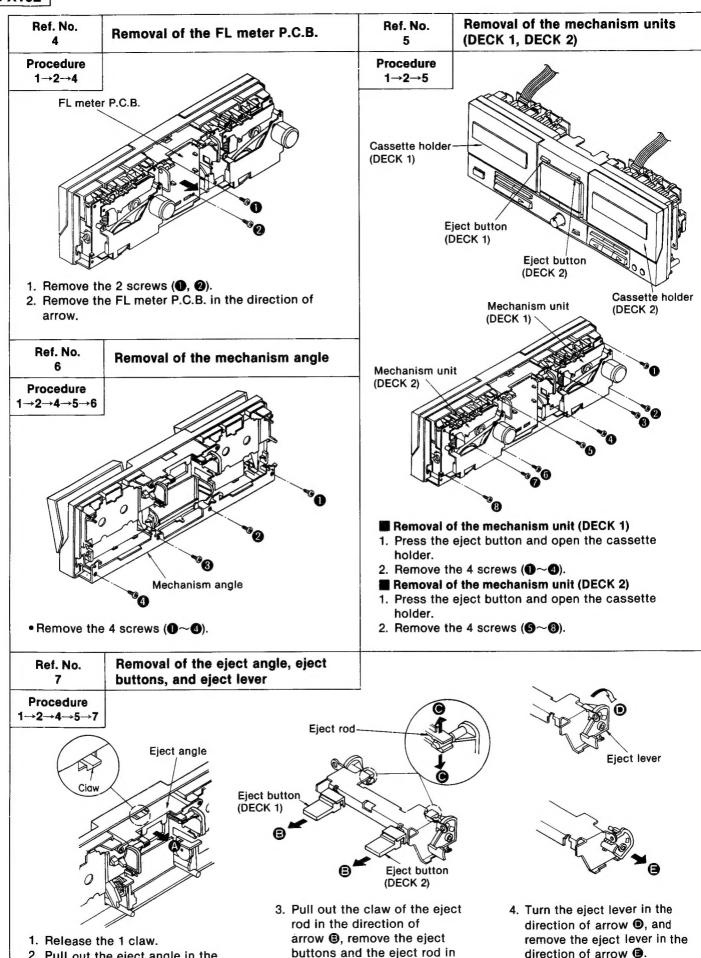
Pull out the flat cable while pressing the connector.
(CN3, CN5, CN8)

Flat cable

(CN4, CN6)

Flat cable

Connector

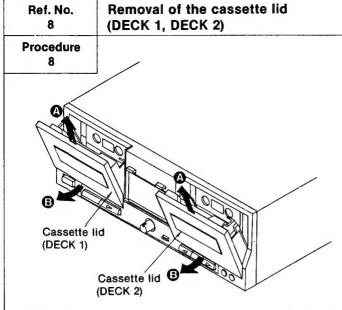


the direction of arrow .

2. Pull out the eject angle in the

direction of arrow (a).

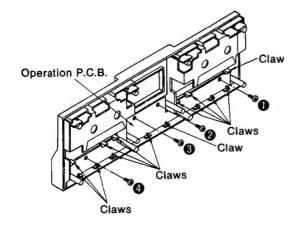
direction of arrow .



Lift the cassette lid in the direction of arrow (a) and remove it in the direction of arrow (3).

10	Removal of the operation P.C.B.
Procedure 1→2→4→5→6 →7→8→9→10	
Rec	level knob

1. Remove the rec level knob.

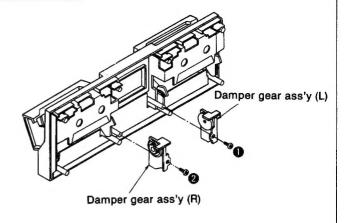


- 2. Remove the 4 screws (1~4).
- 3. Release the 14 claws.

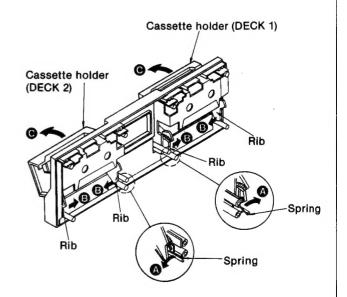
Ref. No.

Removal of the cassette holder (DECK 1, DECK 2)

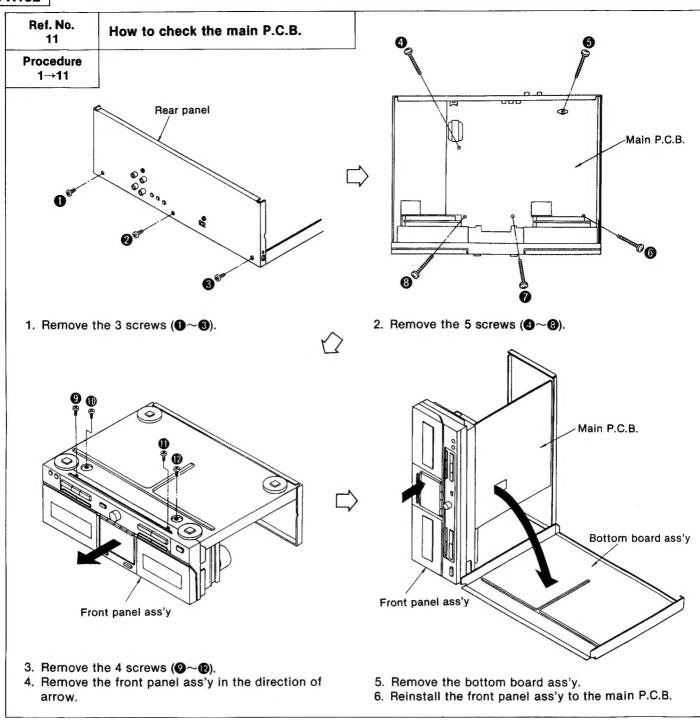
**Procedure** 1→2→4→5 **→6→7→8→9** 



- 1. Remove the 2 screws (1, 2).
- 2. Remove the damper gear ass'y (L) and damper gear ass'y (R).

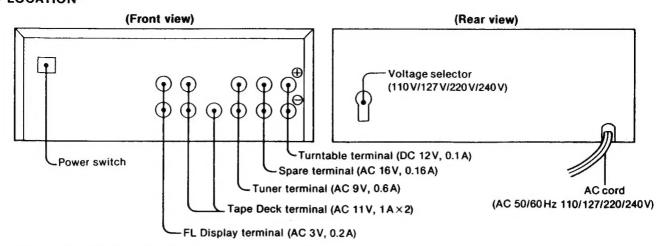


- 3. Remove the springs in the direction of arrow (a).
- 4. Remove the ribs in the direction of arrow B.
- 5. Remove the cassette holder in the direction of arrow @.

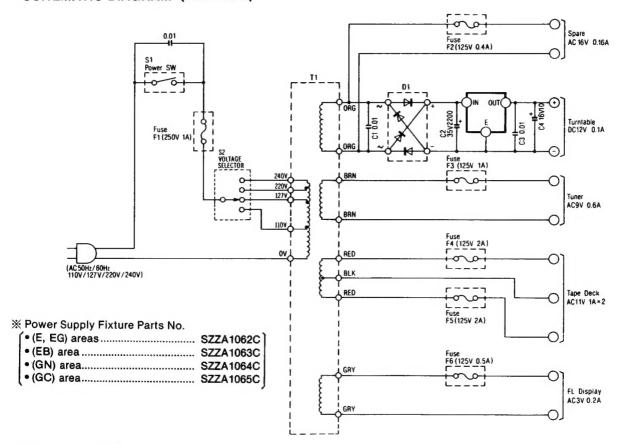


#### **■ INFORMATION ON POWER SUPPLY FIXTURE**

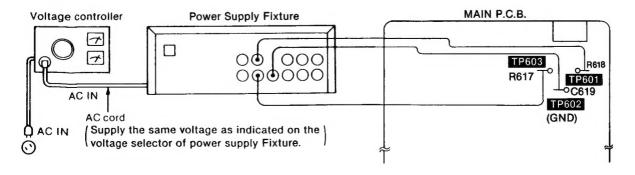
#### LOCATION



#### • SCHEMATIC DIAGRAM (Reference)



#### HOW TO CONNECT



#### ■MEASUREMENTS AND ADJUSTMENTS

#### **Measurement Condition**

- Rec. level control; Maximum
- Reverse-mode selector switch;
- Tape-to-tape-recording tape-speed selector; X1
- Dolby NR selector switch; Off
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature 20±5°C (68±9°F)

#### **Measuring instrument**

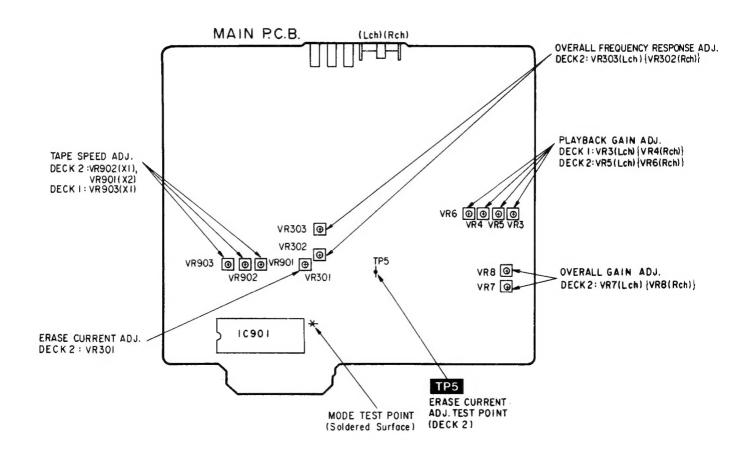
- EVM (Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator

#### Test tape

- Head azimuth adjustment (8 kHz, -20 dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM
- ATT (Attenuator)
- DC voltmeter
- Resistor (600Ω)
- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall frequency response, Overall gain adjustment

Normal reference blank tape; QZZCRA CrO₂ reference blank tape; QZZCRX Metal reference blank tape; QZZCRZ

#### Adjustment Points

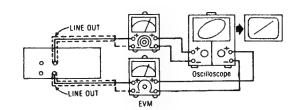


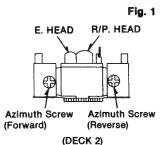
#### **HEAD AZIMUTH ADJUSTMENT (DECK 1/2)**

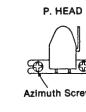
Playback the azimuth adjustment portion (8kHz, -20dB)
of the test tape (QZZCFM). Vary the azimuth adjusting
screw until the outputs of the L-CH and R-CH are
maximized and the lissajous waveform, as illustrated,
approaches 0 degrees.

Note: If L-CH and R-CH are not maximized at the same point, adjust to the point where the levels of each channel are maximized and equal.

- 2. Perform the same adjustment in the play mode.
- After the adjustment, apply screwlock to the azimuth adjusting screw.







(DECK 1) Fig. 2

Digital frequenc

#### **TAPE SPEED ADJUSTMENT (DECK 1/2)**

#### Normal speed

- Shift the Tape-to-tape recording tape-speed selector to "X1" and press the synchro-start button.
- 2. Playback the middle portion of the test tape (QZZCWAT).
- Adjust Deck 1 = VR903 and Deck 2 = VR902 so that the output is within the standard value.

#### High speed

- 4. Shift the Tape-to-tape recording tape speed switch to "X2" and press the synchro-start button.
- 5. Playback the middle portion of the test tape (QZZCWAT).
- 6. Adjust Deck 2=VR901 so that the output is within the standard value.

Note: The Normal speed adjustment must be done before the High speed adjustment.

(DECK 1) Standard value: 3000 ± 15 Hz [Normal (X1)], 6000 ± 600 Hz [High (X2), only confirmation]

## (DECK 1) Standard value: $3000 \pm 15$ Hz [Normal (X1)], $6000 \pm 600$ Hz [High (X2), only confirmation (DECK 2) Standard value: $3000 \pm 15$ Hz [Normal (X1)], $6000 \pm 30$ Hz [High (X2)]

#### PLAYBACK GAIN ADJUSTMENT (DECK 1/2)

- Playback the gain adjusted portion (315Hz, 0dB) of the test tape (QZZCFM).
- Adjust Deck 1 = VR3 (L-CH) [[VR4 (R-CH)]] and Deck 2 = VR5 (L-CH) [[VR6 (R-CH)]] so that the output is within the standard value.

Standard value: 0.4V±0.5dB

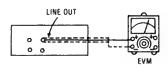


Fig. 3

Fig. 4

#### PLAYBACK FREQUENCY RESPONSE (DECK 1/2)

- 1. Playback the frequency response portion (315Hz, 12.5kHz~63Hz, -20dB) of the test tape (QZZCFM).
- 2. Assure that the frequency response is within the range shown in Fig. 6 for both L-CH and R-CH.

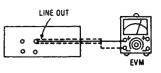


Fig. 5

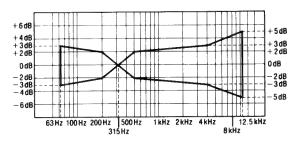
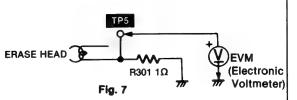


Fig. 6

#### **ERASE CURRENT ADJUSTMENT (DECK 2)**

- Insert the Metal blank test tape (QZZCRZ) and set the unit to the Record Pause mode.
- 2. Adjust VR301 so that the output between TP5 and GND is within the standard value.

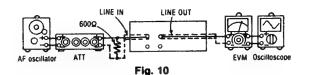
Standard value: 190 ± 5 mA (Metal)...EVM Reading: 190 ± 5 mV



RS-X102

#### **OVERALL FREQUENCY RESPONSE (DECK 2)**

- Insert the Normal blank test tape (QZZCRA) and set the unit to the Record Pause mode.
- 2. Apply a reference input signal (1kHz, -24dB) through an attenuator.
- Attenuate the signal by 20dB and adjust the frequency from 50Hz~10kHz.
- 4. Record the frequency sweep.
- Playback the recorded signal and assure that it is within the range shown in Fig. 8 in comparison to the reference frequency (1 kHz).
- If it is not within the standard range, adjust VR303 (L-CH) and VR302 (R-CH) so that the frequency level is within the standard range.
- Level up in high frequency range ......Increase the bias current.
- Level down in high frequency range ... Decrease the bias current.
- Repeat steps 2~6 above using the CrO<sub>2</sub> tape (QZZCRX) and the Metal tape (QZZCRZ) increasing the frequency range to 12.5kHz (50Hz~12.5kHz).
- 8. Assure that the level is within the range shown in Fig. 9.



#### Normal Overall frequency response chart (NR OUT)

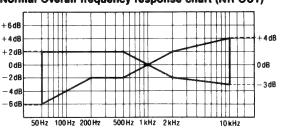


Fig. 8

#### CrO<sub>2</sub> Metal Overall frequency response chart (NR OUT)

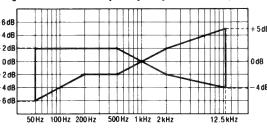
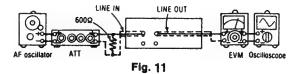


Fig. 9

#### **OVERALL GAIN ADJUSTMENT (DECK 2)**

- Insert the Normal blank test tape (QZZCRA) and set the unit to the Record pause mode.
- Apply a reference input signal (1kHz, -24dB).
   Attenuate the output so that its level becomes 0.4 V.
- 3. Record this input signal.
- 4. Playback the signal recorded in step 3 above, and assure that the output is within the standard value.
- If it is not within the standard value, adjust VR7 (L-CH) and VR8 (R-CH).
- Repeat the step 2~5 above until the output is within the standard value.

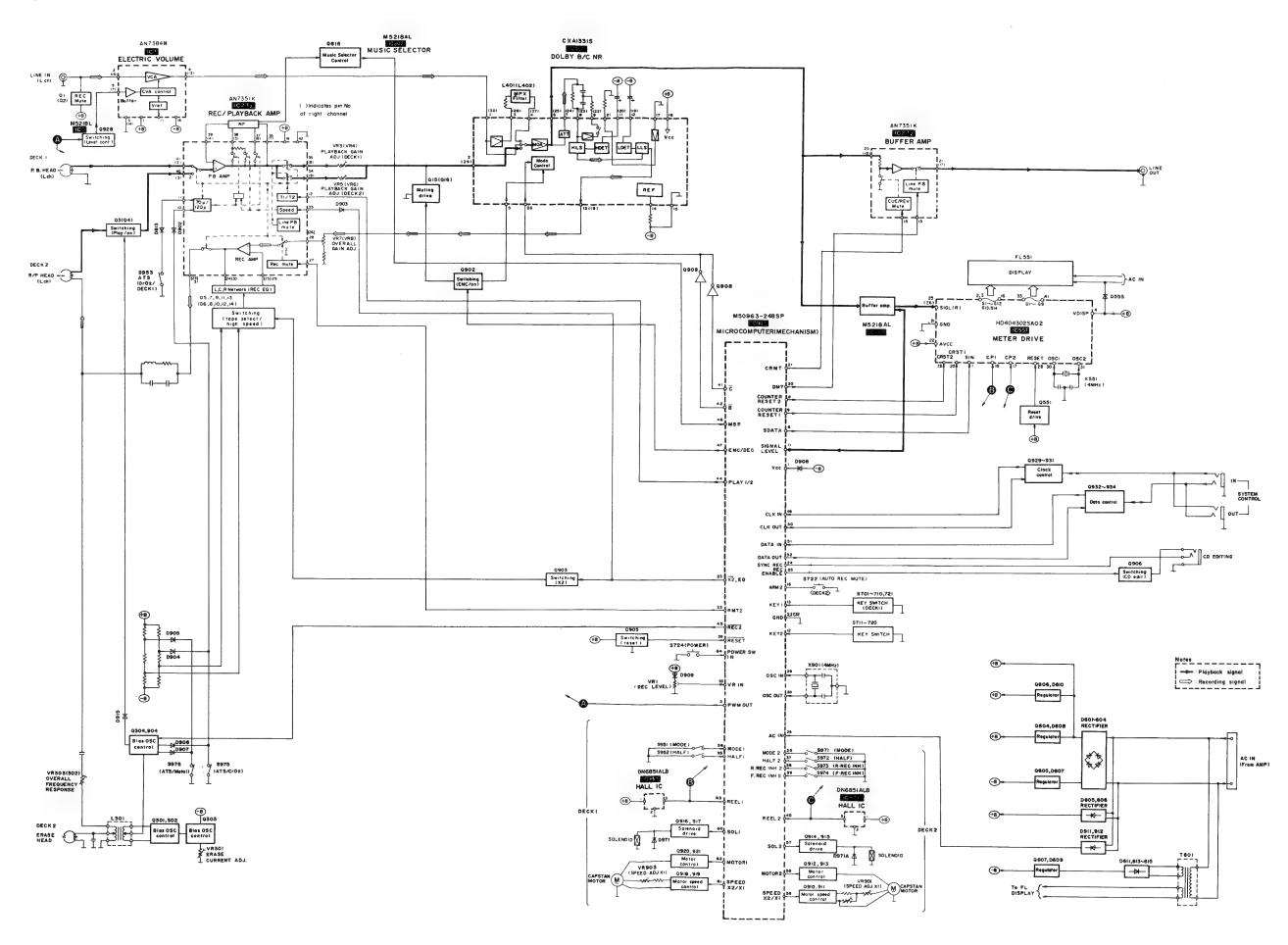
Standard value: 0.4V±0.5dB

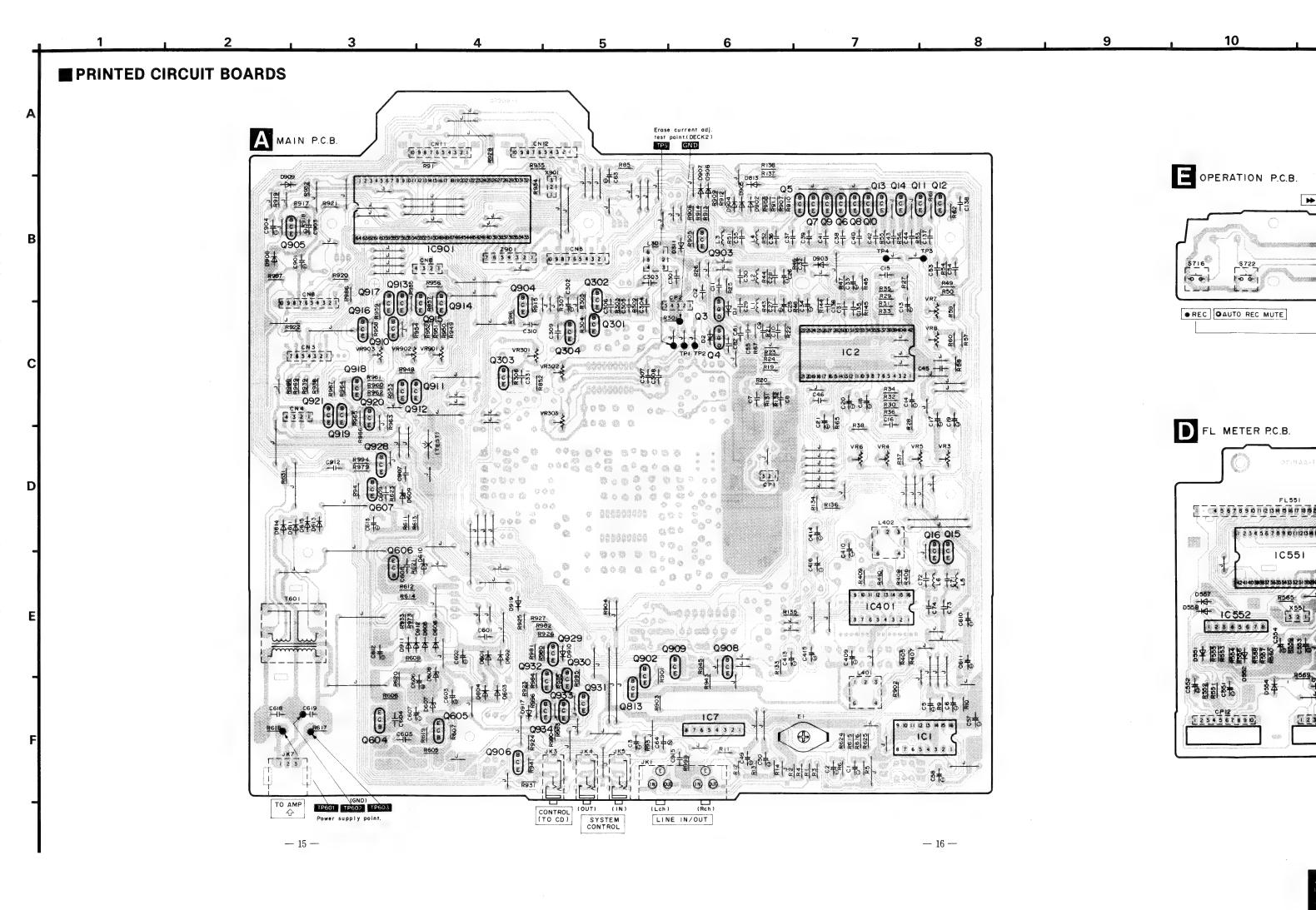


<del>- 12 -</del>

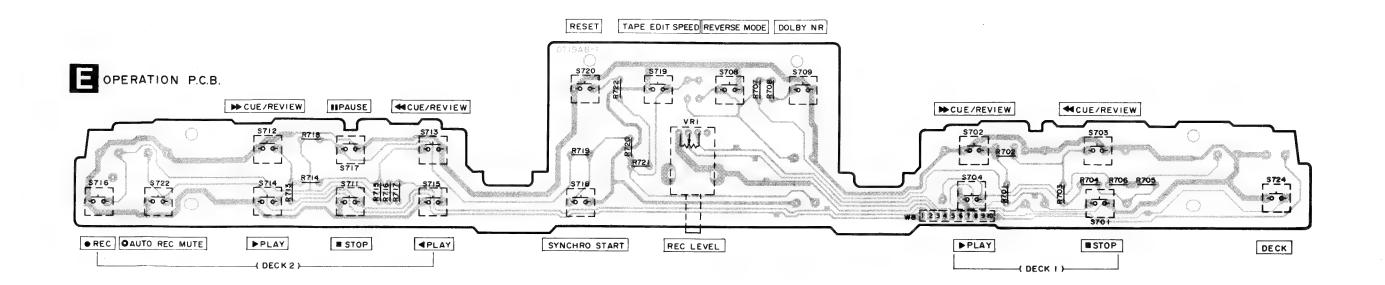
#### -11 -

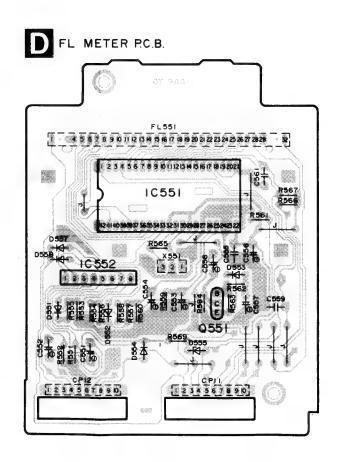
#### **■ BLOCK DIAGRAM**

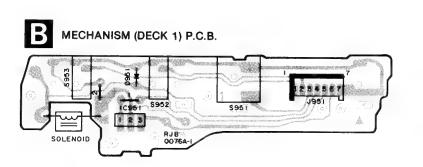


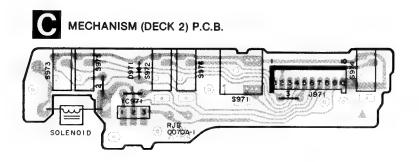


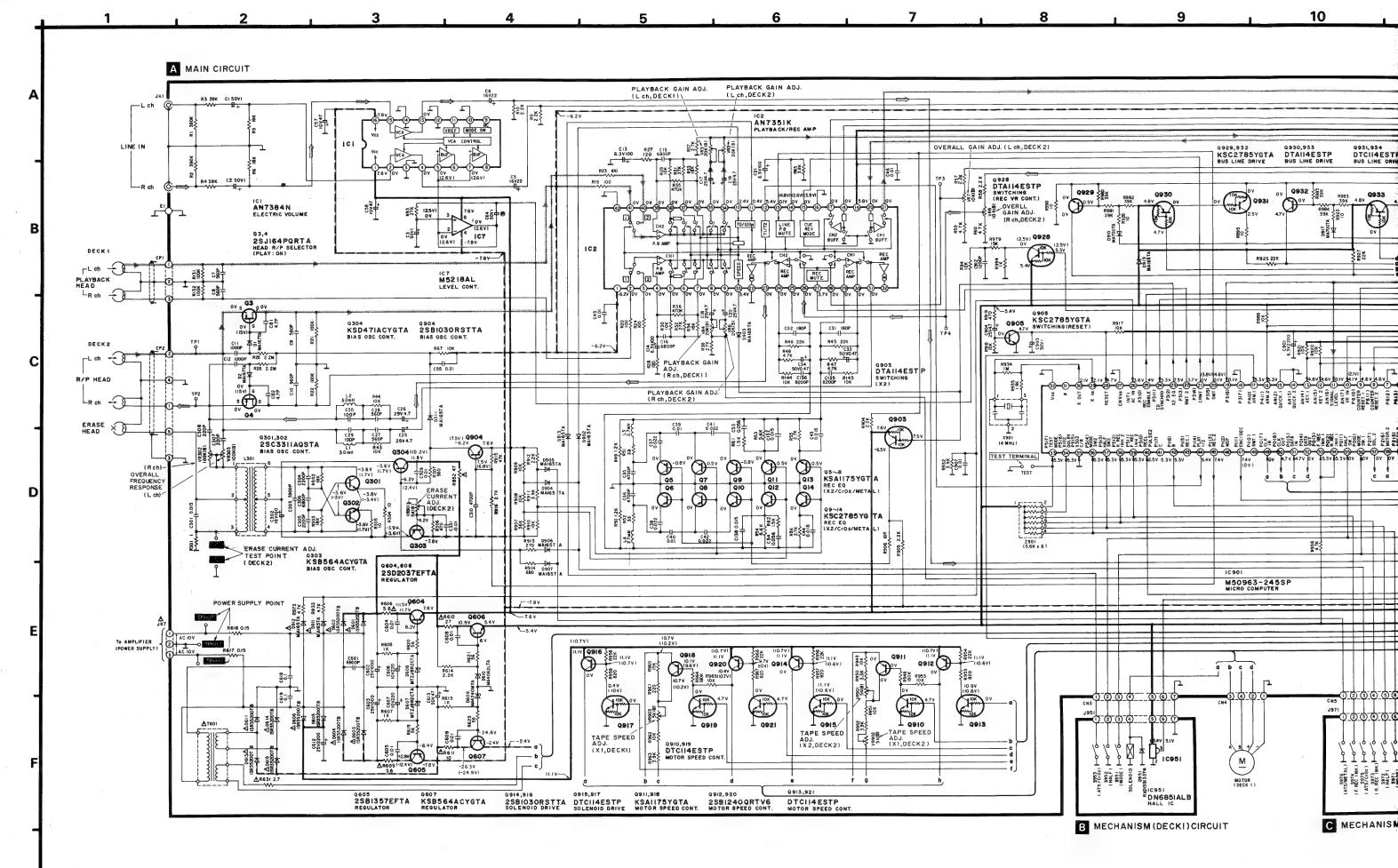
10 11 12 13 14 15 16 17 18 19

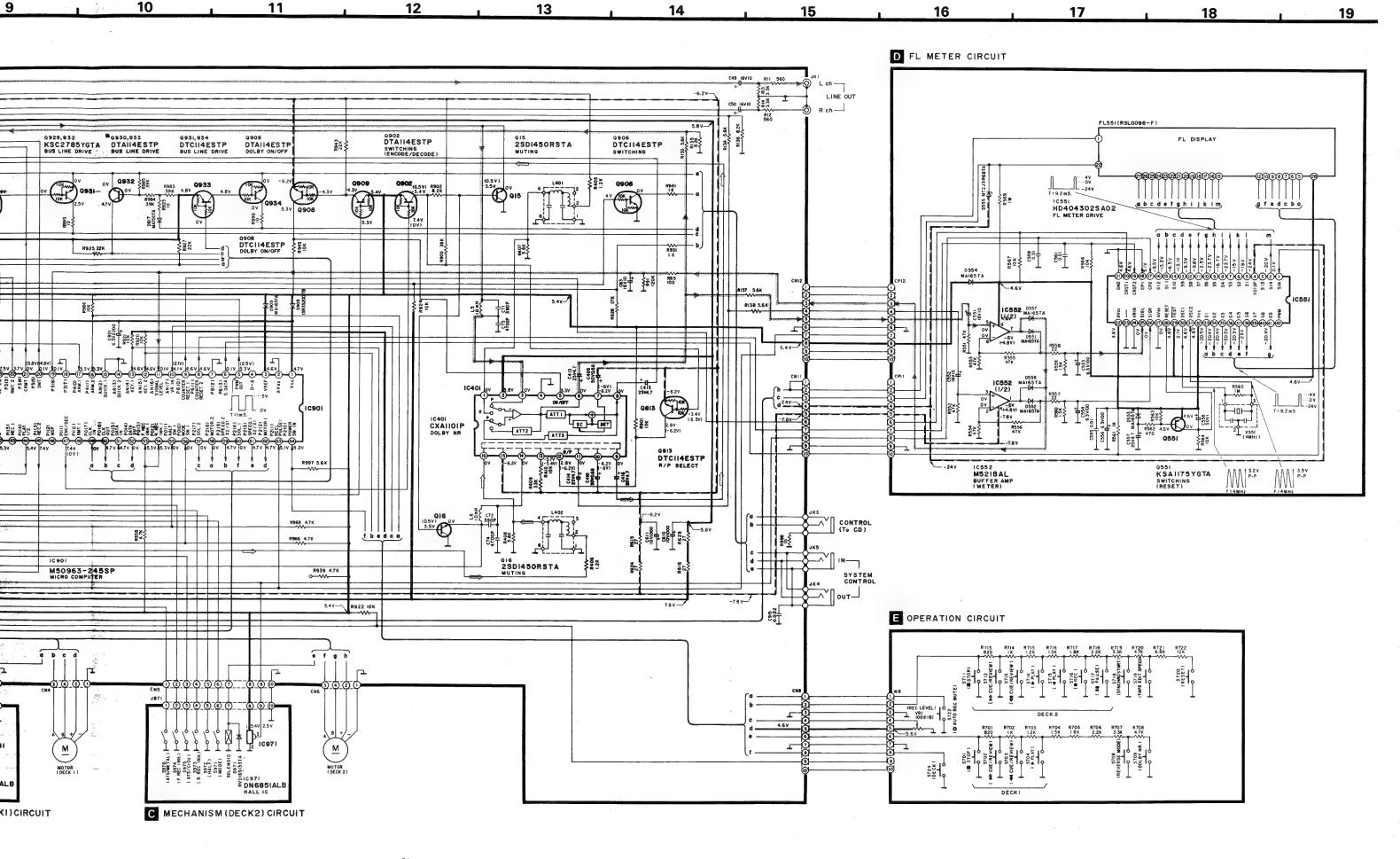












#### SCHEMATIC DIAGRAM (Parts list on pages 28~31.)

(This schematic diagram may be modified at any time with development of new technology.)

#### Notes:

- S701: DECK 1 Stop switch (■ STOP).
- S702: DECK 1 Fast-forward switch (▶▶).
- S703: DECK 1 Rewind switch (◄◄).
- S704: DECK 1 Forward-side playback switch (> PLAY).
- S708: Reverse mode switch
- S709: Dolby noise-reduction selector switch (Dolby NR).
- S711: DECK 2 Stop switch ( STOP).
- S712: DECK 2 Fast-forward switch (▶▶).
- S713: DECK 2 Rewind switch (◄◄).
- S714: DECK 2 Forward-side playback switch (▷ PLAY).
- S715: DECK 2 Reverse-side playback switch (< PLAY).
- S716: DECK 2 Record switch (● REC).
- S717: DECK 2 Pause switch ( PAUSE).
- S718: Synchro-start switch (SYNCHRO START).
- S719: Tape-to-tape recording tape-speed selector switch (TAPE EDIT SPEED).
- S720: DECK 2 Tape counter reset switch (RESET).
- S722: DECK 2 Automatic-record-muting switch ( AUTO REC MUTE).
- S724: DECK ON/OFF switch in "on" position (DECK).
- S951: DECK 1 Mode switch in "off" position.
- S952: DECK 1 Cassette half detection switch in "off" position.
- S953: DECK 1 ATS (CrO<sub>2</sub>) switch in "off" position.
- S971: DECK 2 Mode switch in "off" position.
- S972: DECK 2 Cassette half detection switch in "off" position.
- S973: DECK 2 Rev. Rec Inhibit switch in "off" position.
  S974: DECK 2 For. Rec Inhibit switch in "off" position.
  S975: DECK 2 ATS (CrO<sub>2</sub>) switch in "off" position.
- S976: DECK 2 ATS (Metal) switch in "off" position.

- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
- $1 K = 1,000 (\Omega), 1 M = 1,000 k (\Omega)$
- Capacity are in micro-farads (µF) unless specified otherwise.
- All voltage values shown in circuitry are under no signal condition and playback mode of deck 2 with volume control at minimum position otherwise specified.
  - > ......Voltage values at playback mode of deck 1.
- ( ).....Voltage values at record mode.

For measurement us EVM.

• Important safety notice

Components identified by  $\triangle$  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

- ( ----- ) indicates +B (bias).
- ( -B>-B> ) indicates -B (bias).
- ( ) indicates the flow of the playback signal.
- ( ) indicates the flow of the record signal.
- The supply part number is described alone in the replacement parts list.

Ref. No.	Production Part No.	Supply Part No.
IC7, 552	M5218AL	M5218L

#### \* Caution!

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

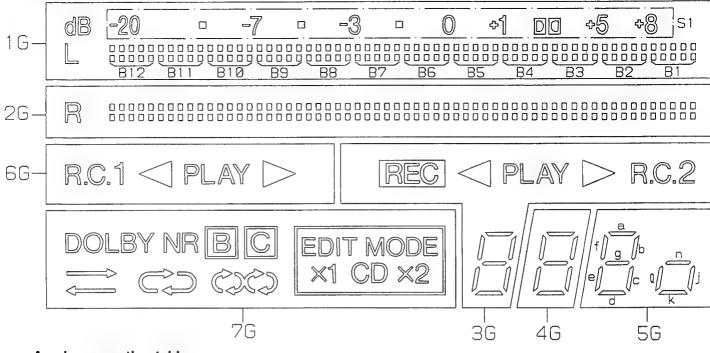
- \* Cover the parts boxes made of plastics with aluminum foil.
- \* Ground the soldering iron.
- \* Put a conductive mat on the work table.
- \* Do not touch the legs of IC or LSI with the fingers directly.

#### **■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES**

CXA1101P AN7384N	HD404302SA02	AN7351K	M50963-245SP	M5218AL	DN6851ALB
KSB564ACYGTA KSD471ACYGTA	B <sub>C</sub> E	KSA1175YGTA KSC2785YGTA 2SC3311AQSTA DTA114ESTP DTC114ESTP	2SB1030RSTTA 2SD1450RSTA E C B	2SB1357EFTA 2SD2037EFTA	2SJ164PQRTA
2SB1240QRTV6	Ca Cathode Anode	MA165TA MA167TA MA700TA 1SR35200TB RVD1SS133TA	MTZJ5R6BTA MTZJ8R2CTA  Ca Cathode A	MA4062LTA  Ca Cathode A  Anode	MA4240MTA  Ca Cathode A  Anode

#### ■ INTERNAL CONNECTION OF FL

#### • Grid connection diagram



#### Anode connection table

	7G	6G	5G	4G	3G	2G	1G
P1	(DC)		n	_		B1	B1
P2		PLAY	j	_	PLAY	B2	B2
P3	<b>⇒</b>		Q	_		B3	B3
P4	EDIT MODE	R.C.1	k	*****	R.C.2	B4	Ŗ4
P5	CD	Address	_	_	REC	B5	B5
P6	×2	_	а	а	а	B6	B6
P7	×1	_	b	ь	ь	B7	B7
P8		-	f	f	f	B8	B8
P9	8	-	g	g	g.	B9	B9
P10	C	_	С	С	С	B10	B10
P11	DOLBYNR	_	е	е	е	B11	B11
P12		_	d	đ	d	B12	B12
P13		_	- Control	9.400	_	_	S1
P14			-		_	R	dB L

#### Pin connection

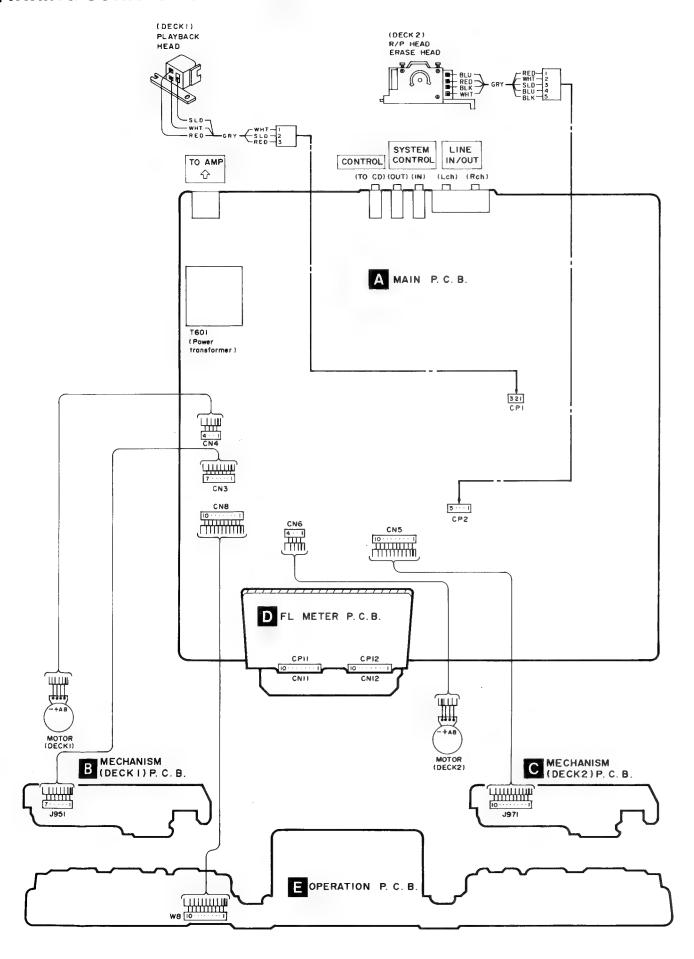
PIN NO.	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F 2	F 2	N P	N	P 14	P 12	P 11	P 10	P 9	P 8	P 7	P 6	P 5	P 4	P 3	P 2	P 1	P 13	NC	N	7 G	NC	6 G	5 G	4 G	3 G	2 G	1 G	NC	N P	F 1	F 1

#### Note

1)	F1, F2Filament
	NPNo pin

- 3) NC ......No connection
- 4) 1G~7G.....Grid

## **■ WIRING CONNECTION DIAGRAM**



## **■ TERMINAL FUNCTION OF IC'S**

• IC901 (M50963-245SP): MICROCOMPUTER (This microcomputer is used for mechanical operation.)

Pin No.	Mark	I/O Division	Function
1	V <sub>cc</sub>	ı	Power supply terminal
2	AV <sub>SS</sub> (GND)		GND terminal
3	V <sub>REF</sub>	ı	Reference voltage terminal
4	D-A	_	Not used, open
5	PWM	0	Pulse width modulated signal
6	P6 (3)	0	Serial signal for FL display
7	P6 (2)	_	Not used, open
8	P6 (1)	0	Counter reset signal of deck 2 ("RESET": "L", others: "H")
9	P6 (0)	0	Counter reset signal of deck 1 ("RESET": "L", others: "H")
10	AN (7)	l	Variable voltage level signal of rec. level volume
11	AN (6)	ı	Peak voltage terminal of rec. signal
12	AN (5)	I	Operation key switches Deck 2: STOP, F.F./REW, PLAY, REC, PAUSE, SYNCHRO START, X1/X2, counter reset
13	AN (4)	1	Operation key switches Deck 1: STOP, F.F./REW, F. PLAY, Dolby B/C, Meter range counter reset
14	AN (3)	-	Leader tape det. signal of deck 2
15	AN (2)	-	Leader tape det. signal of deck 1
16	P4 (1)	1	"AUTO REC MUTE" key switch signal of deck 2 ("ON": "L", "OFF": "H")
17	P4 (0)	ţ	Not used, open
18	P3 (7)		Not used
19	P3 (6)	_	Not used
20	P3 (5)	0	Mute signal of line out (Mute "ON": "H", Mute "OFF": "L")
21	P3 (4)	0	Mute signal with Cue/Review action (Mute "ON": "H", Mute "OFF": "L")
22	P3 (3)	0	Rec. mute signal of deck 2 (Mute "ON": "H", Mute "OFF": "L")

	Pin No.	Mark	I/O Division	Function
	23	P3 (2)	0	Playback equalizer select signal with tape edit of deck 1 (Normal: "H", X2 edit: "L")
-	24	P3 (1)	-	CD Synchro rec. signal (CD STOP: "H", CD PLAY: "L")
	25	P3 (0)	0	CD Synchro rec. possible/impossible signal (possible: "L", impossible: "H")
	26	INTI	1	"AC POWER OFF" det. terminal
-	27	CNVss	_	GND terminal
	28	RESET	ı	Reset signal ("L"=RESET, Normal: "H")
	29	X <sub>IN</sub>	1	Cleak OSC terminal
	30	Хоит	0	Clock OSC terminal
-	31	φ	_	Not used, open
	32	V <sub>ss</sub>	_	GND terminal
	33	P5 (7)	ı	Test terminal (Normal="H")
7	34	P5 (6)	ı	Model select (Normal: "L")
	35	P5 (5)	I	Model select (Normal: "L")
	36	P5 (4)	l	Mechanism mode switch ("ON": "L", "OFF": "H")
	37	P5 (3)	l	Cassette half det. switch ("ON": "L", "OFF": "H")
	38	P5 (2)	Ι	Reverse rec. inh. switch of deck 2 ("ON": "L", "OFF": "H")
	39	P5 (1)	I	Forward rec. Inh. switch of deck 2 ("ON": "L", "OFF": "H")
	40	P5 (0)	I	Reel rotation pulse signal of deck 2
$\frac{1}{2}$	41	P1 (7)	_	Not used, open
	42	P1 (6)	0	Dolby B "ON/OFF" select signal ("ON": "L", "OFF": "H")
	43	P1 (5)		Not used, open
	44	P1 (4)	0	Playback amp. select signal (Deck 2-P.B: "L", others: "H")
-	45	P1 (3)	0	Bias OSC "ON/OFF" select signal ("ON": "L", "OFF": "H")
	46	P1 (2)		Not used, open

Pin No.	Mark	I/O Division	Function
47	P1 (1)	0	Dolby circuit encord/decord select signal (encord: "L", decord: "H")
48	P1 (0)	_	Not used, open
49	P0 (7)	ı	Due eleck eignel
50	P0 (6)	0	Bus clock signal
51	P0 (5)	ı	Bus data signal
52	P0 (4)	0	bus data signal
53	P0 (3)	ı	Forward rec. inh. switch of deck 1 ("ON": "L", "OFF": "H")
54	P0 (2)	1	Reverse rec. inh. switch of deck 1 ("ON": "L", "OFF": "H")
55	P0 (1)	ı	Cassette-half det. switch of deck 1 ("ON": "L", "OFF": "H")
56	P0 (0)	-	Mechanism mode-switch of deck 1 ("ON": "L", "OFF": "H")
57	P2 (7)	0	Mechanism plunger "ON/OFF" select signal of deck 2 ("ON": "H", "OFF": "L")

Pin No.	Mark	I/O Division	Function
58	P2 (6)	0	Mechanism motor "ON/OFF" select signal of deck 2 ("ON": "H", "OFF": "L")
59	P2 (5)	0	Mechanism motor speed select signal of deck 2 ("X1": "H", "X2": "L")
60	P2 (4)	0	Mechanism plunger "ON/OFF" select signal of deck 1 ("ON": "H", "OFF": "L")
61	P2 (3)	0	Mechanism motor speed select signal of deck 1 ("X1": "H", "X2": "L")
62	P2 (2)	0	Mechanism motor "ON/OFF" select signal of deck 1 ("ON": "H", "OFF": "L")
63	P2 (1)	I	Mechanism reel rotation pulse signal of deck 1
64	P2 (0)	ı	Power switch ("ON": "L", "OFF": "H")

#### • IC551 (HD404302SA02): MICROCOMPUTER (This microcomputer is used for FL meter operation.)

Pin No.	Mark	I/O Division	Function
1	SIN	1	Serial data signal
2 • 5 √ 16	S1 S12 • S14	0	Segment signal for FL display
3	S13	_	Not used, open
4	V disp	ı	Pull down power supply terminal (-V <sub>cc</sub> )
17	CP2	1	Peel pulse signal of deck 2
18	CP1	1	reel pulse signal of deck 2
19	CRST2	1	Tape counter reset terminal of deck 2
20	CRST1	ı	Tape counter reset terminal of deck 1
21	GND	-	GND terminal
22	AVCC	1	Power supply terminal

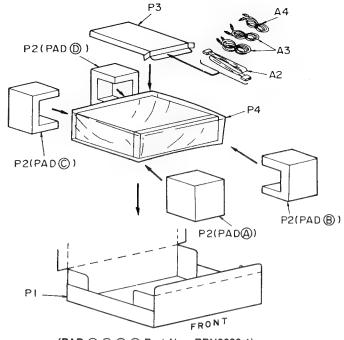
Pin No.	Mark	I/O Division	Function			
23		_				
24	VRIN	******	Rec level control signal			
25	SIGL	1	Lch level signal			
26	SIGR	ı	Rch level signal			
27	AVSS	_	GND terminal			
28	RESET	1	Reset terminal ("RESET": "H")			
29	TEST	1	Test terminal			
30	OSC1	0	Clock OSC terminal (4MHz)			
31	OSC2	I	Clock OSC (eminial (4 MHz)			
32	vcc	1	Power supply terminal			
33 \$ 38 • 41	G1	0	Grid signal for FL display			
39 • 40	G7 • G8	_	Not used, open			
42	PWM		Not used, open			

## **PACKING**

#### Note:

This packing not illustrated Ref. No. A1 (A1-1, A1-2, A1-3).

Refer to the packing on page 38 of the service manual for Model No. SU-X102, Order No. AD9103049C8.



⟨PAD (A) (B) (C) (D) Part No.: RPN0383-1⟩

#### REPLACEMENT PARTS LIST

Notes: \* Important safety notice:

Components identified by A mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

		es use only manufacturer					
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
				Q813	DTC114ESTP	TRANSISTOR	
		INTEGRATED CIRCUIT(S)		Q902, 903	DTA114ESTP	TRANSISTOR	
				Q904	2SB1030QTA	TRANSISTOR	
IC1	AN7384N	ELECTRIC VOLUME		Q905	KSC2785YGTA	TRANSISTOR	
IC2	AN7351K	PLAYBACK/REC AMP		Q906	DTC114ESTP	TRANSISTOR	
IC7	M5218L	REC LEVEL CONTROL		Q908	DTC114ESTP	TRANSISTOR	
IC401	CXA1101P	DOLBY NR		Q909	DTA114ESTP	TRANSISTOR	
IC551	HD404302SA02	MICROCOMPUTER; FL METER		Q910	DTC114ESTP	TRANSISTOR	
IC552	M5218L	BUFFER AMP		Q911	KSA1175YGTA	TRANSISTOR	
IC901	M50963-245SP	MICROCOMPUTER; MECHANICAL		Q912	2SB1240-P	TRANSISTOR	
IC951	DN6851ALB	HALL (DECK1)		Q913	DTC114ESTP	TRANSISTOR	
IC971	DN6851ALB	HALL (DECK2)		Q914	2SB1030QTA	TRANSISTOR	
				Q915	DTC114ESTP	TRANSISTOR	
		TRANSISTOR(S)		Q916	2SB1030QTA	TRANSISTOR	
				Q917	DTC114ESTP	TRANSISTOR	
Q3, 4	2SJ164PQRTA	TRANSISTOR		Q918	KSA1175YGTA	TRANSISTOR	
Q5-8	KSA1175YGTA	TRANSISTOR		Q919	DTC114ESTP	TRANSISTOR	
Q9	KSC2785YGTA	TRANSISTOR		Q920	2SB1240-P	TRANSISTOR	
Q10-14	KSC2785YGTA	TRANSISTOR		Q921	DTC114ESTP	TRANSISTOR	
Q15, 16	2SD1450RSTA	TRANSISTOR		Q928	DTA114ESTP	TRANSISTOR	
Q301, 302	2SC3311A-Q	TRANSISTOR		Q929	KSC2785YGTA	TRANSISTOR	
Q303	KSB564ACYGTA	TRANSISTOR		Q930	DTA114ESTP	TRANSISTOR	
Q304	KSD471ACYGTA	TRANSISTOR		Q931	DTC114ESTP	TRANSISTOR	
Q551	KSA1175YGTA	TRANSISTOR		Q932	KSC2785YGTA	TRANSISTOR	
Q604	2SD2037EFTA	TRANSISTOR		Q933	DTA114ESTP	TRANSISTOR	
Q605	2SB1357EFTA	TRANSISTOR		Q934	DTC114ESTP .	TRANSISTOR	
Q606	2SD2037EFTA	TRANSISTOR					
Q607	KSB564ACYGTA	TRANSISTOR					

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		DIODE (S)		X901	EFOGC4004A4	CERAMIC FILTER (4MHz)	
D1, 2	MA167	DIODE			ļ	DISPLAY TUBE	
D311	MA165	DIODE					
D551-554	MA165	DIODE		FL551	RSL0098-F	DISPLAY TUBE	
D555	MTZJ5R6BTA	DIODE					
D557, 558	MA165	DIODE			ļ	SWITCH(ES)	
D601-606	1SR35200TB	DIODE	Δ				
D607, 608	MTZJ8R2CTA	DIODE	21.1.1.1.111111111111111111111111111111	S701	EVQ21405R	STOP (DECK1)	
D609	MA4240H	DIODE		S702	EVQ21405R	F. F. (DECK1)	
D610	MA4062	DIODE		S703	EVQ21405R	REW. (DECK1)	
D611	1SR35200TB	DIODE	Δ	S704	EVQ21405R	F. PLAYBACK (DECK1)	
D613-615	1SR35200TB	DIODE	Δ	S708	EVQ21405R	REVERSE MODE	
D813	MA165	DIODE		S709	EVQ21405R	DOLBY NR	
D902-907	MA165	DIODE		S711	EVQ21405R	STOP (DECK2)	
D908	1SR35200TB	DIODE		S712	EVQ21405R	F. F. (DECK2)	
D909	MA165	DIODE		S713	EVQ21405R	REW. (DECK2)	
D910	MA700TA	DIODE		S714	EVQ21405R	F. PLAYBACK (DECK2)	
D911, 912	MA165	DIODE	Δ	S715	EVQ21405R	R. PLAYBACK (DECK2)	
D917	MA700TA	DIODE		S716	EVQ21405R	REC (DECK2)	
D919	MA165	DIODE		S717	EVQ21405R	PAUSE (DECK2)	
D951	RVD1SS133TA	DIODE (DECK1)		S718	EVQ21405R	SYNCHRO START	
D971	RVD1SS133TA	DIODE (DECK2)		S719	EVQ21405R	TAPE EDIT SPEED(X1/X2)	
				S720	EVQ21405R	COUNTER RESET (DECK2)	
		VARIABLE RESISTOR(S)		S722	EVQ21405R	AUTO REC MUTE (DECK2)	
				S724	EVQ21405R	DECK (POWER ON/OFF)	
VR1	EVJ02FF01B15	REC. LEVEL CONTROL		S951	RSH1A89ZB-U	MODE (DECK1)	
VR3-6	-	PLAYBACK GAIN ADJ.		S952	RSH1A90YB-U	HALF (DECK1)	
VR7, 8	EVNDXAA00B14	OVERALL GAIN ADJ.		S953	RSH1A90YB-U	ATS (DECK1)	
VR301	EVNDXAA00B53	ERASE CURRENT ADJ.		S971	RSH1A89ZB-U	MODE (DECK2)	
VR302, 303	EVNDXAA00B15	OVERALL FREQ. ADJ.		S972	RSH1A90YB-U	HALF (DECK2)	
VR901-903	EVNDXAA00B53	TAPE SPEED ADJ.		S973	RSH1A90YB-U	R REC INH. (DECK2)	
71001 300	LTHDIERSOODOO	THE CILLED HOU.		S974		F. REC 1NH. (DECK2)	
		COMPONENT COMBINATION (S)		S975	RSH1A90YB-U	ATS (DECK2)	
		COMPONENT COMPTICATION (3)		S976	RSH1A90YB-U	ATS (DECK2)	
7001	EXBF7E562JYV	COMBINATION PART(5. 6kX6)		3970	VOULWACID_C	AIS (DECRZ)	
Z901	EADE/E302JIV	COMMINATION PART(3. 0KA0)				CONTROTOD (C) AND COCKET (C)	
		GOT! (O)				CONNECTOR (S) AND SOCKET (S)	
		COIL(S)		OVO	D ICCOMAGE	ANNICAMEN (SE)	
[1 0	CLOVOOR 1VT	0011		CN3	RJS7T4ZA	CONNECOTR (7P)	
L1, 2	-	COIL		CN4	RJS1A1704	CONNECTOR (4P)	
L3, 4		COIL		CN5	SJSD1005	CONNECTOR (10P)	
L5, 6		COIL		CN6	RJS1A1704	CONNECTOR (4P)	
L301	SL09B4-K	COIL		CN8	SJSD1005	CONNECTOR (10P)	
L401, 402	QLM9Z10K	COIL		CN11, 12	RJU003K010M1	SOCKET (10P)	
				CP1	SJTD313	CONNECTOR (3P)	
		TRANSFORMER (S)		CP2	RJP5G18ZA	CONNECTOR (5P)	
man4				CP11, 12	RJT003K010M1	CONNECTOR (10P)	
T601	RTP1H4G001	POWER TRANSFORMER	Δ				
						JACK(S)	
		OSCILLATOR(S)					
				JK1	SJF3069-2N	TERMIANL BOARD	
X551	EFOGC4004A4	CERAMIC FILTER (4MHz)		JK3-5	RJJ33T01	M3 JACK	

Ref. No.	Part No.	Part Name & Description	Remarks
JK7	RJS1A0203-0	SOCKET(3P) TO AMPLIFIER	Δ
		GND PART(S)	
E1	SNE1004-1	GND PLATE	
		FLAT CABLE (S)	
W3	RWJ0207210QQ	FLAT CABLE (7P)	
	RWJ1804200QQ	FLAT CABLE (4P)	
		FLAT CABLE (10P)	
		FLAT CABLE (4P)	
W8	RWJ0210200KQ	FLAT CABLE (10P)	

## **■ RESISTORS & CAPACITORS**

Notes: \* Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads(pF) F=Farads(F)
\* Resistance values are in ohms, unless specified otherwise, 1K=1,000(0HM), 1M=1,000k(0HM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Valu	ıes & F	Remarks
			R61, 62	ERDS2TJ152	1/4W 1.5K	R566, 567	ERDS2TJ103	1/4W	10K	
		RESISTORS	R65	ERDS2TJ392T	1/4W 3. 9K	R569	ERDS2TJ105T	1/4W	1M	
			R67	ERDS2TJ103	1/4W 19K	R605, 606	ERD2FCVJ5R6T	1/4W	5. 6	Δ
R1, 2	ERDS2TJ394	1/4W 390K	R85	ERDS2TJ101	1/4W 100	R607, 608	ERDS2TJ102	1/4W	1K	
R3, 4	ERDS2TJ393	1/4W 39K	R91	ERDS2TJ124T	1/4W 120K	R611	ERD2FCVG100T	1/4W	10	Δ
R5, 6	ERDS2TJ183T	1/4W 18K	R93	ERDS2TJ273	1/4W 27K	R612	ERD2FCVG270T	1/4W	27	Δ
R9, 10	ERDS2TJ222	1/4W 2. 2K	R94	ERDS2TJ123	-1/4W 12K	R613	ERDS2TJ102	1/4W	1K	
R11, 12	ERDS2TJ561	1/4W 560	R131, 132	ERDS2TJ104	1/4W 100K	R614	ERDS2TJ222	1/4W	2. 2K	
R13, 14	ERDS2TJ332	1/4W 3. 3K	R133, 134	ERDS2TJ562	1/4W 5. 6K	R615, 616	ERDS2TJ270T	1/4W	27	
R19, 20	ERDS2TJ101	1/4W 100	R135, 136	ERDS2TJ822	1/4W 8. 2K	R617, 618	ERQ16NKWR15E	1W	0.15	
R21, 22	ERDS2TJ104	1/4W 100K	R137, 138	ERDS2TJ562	1/4W 5. 6K	R619-621	ERDS2TJ560T	1/4W	56	
R23, 24	ERDS2TJ101	1/4W 100	R144, 145	ERDS2TJ103	1/4W 10K	R623	ERDS2TJ560T	1/4W	56	
R25, 26	ERDS2TJ225	1/4W 2.2M	R301	ERDS2TJ1RO	1/4W 1.0	R624, 625	ERDS2TJ270T	1/4W	27	
R27, 28	ERDS2EJ121	1/4W 120	R302, 303	ERDS2TJ183T	1/4W 18K	R631	ERD25FVJ2R7T	1/4W	2. 7	Δ
R29, 30	ERDS2TJ103	1/4W 10K	R304, 305	ERDS2TJ100	1/4W 10	R701	ERDS2TJ821	1/4W	820	
R31, 32	ERDS2TJ273	1/4W 27K	R306	ERDS2TJ471	1/4W 470	R702	ERDS2TJ102	1/4W	1K	
R33, 34	ERDS2TJ183T	1/4W 18K	R307	ERDS2TJ561	1/4W 560	R703	ERDS2TJ122	1/4W	1. 2K	
R35, 36	ERDS2TJ474	1/4W 470K	R405, 406	ERDS2TJ122	1/4W 1. 2K	R704	ERDS2TJ152	1/4W	1.5K	
R37, 38	ERDS2TJ272T	1/4W 2.7K	R407, 408	ERDS2TJ562	1/4W 5.6K	R705	ERDS2TJ182	1/4W	1. 8K	
R43, 44	ERDS2TJ103	1/4W 10K	R409	ERDS2TJ333	1/4W 33K	R706	ERDS2TJ222	1/4W	2. 2K	
R45, 46	ERDS2TJ223	1/4W 22K	R410	ERDS2TJ103	1/4W 10K	R707	ERDS2TJ332	1/4W	3. 3K	
R47, 48	ERDS2TJ472	1/4W 4.7K	R551-556	ERDS2TJ473	1/4W 47K	R708	ERDS2TJ472	1/4W	4. 7K	
R49, 50	ERDS2TJ122	1/4W 1.2K	R557, 558	ERDS2TJ220T	1/4W 22	R713	ERDS2TJ821	1/4W	820	
R51, 52	ERDS2TJ330	1/4W 33	R559, 560	ERDS2TJ152	1/4W 1.5K	R714	ERDS2TJ102	1/4W	1K	
R53, 54	ERDS2TJ562	1/4W 5.6K	R561	ERDS2TJ102	1/4W 1K	R715	ERDS2TJ122	1/4W	1. 2K	
R55, 56	ERDS2TJ272T	1/4W 2.7K	R562	ERDS2TJ471	1/4W 470	R716	ERDS2TJ152	1/4W	1. 5K	
R57, 58	ERDS2TJ222	1/4W 2. 2K	R563, 564	ERDS2TJ103	1/4W 10K	R717	ERDS2TJ182	1/4W	1. 8K	
R59, 60	ERDS2TJ472	1/4W 4.7K	R565	ERDS2TJ105T	1/4W 1M	R718	ERDS2TJ222	1/4W	2. 2K	

Ref. No.	Part No.	Part Name & Description	Remarks
JK7	RJS1A0203-0	SOCKET(3P) TO AMPLIFIER	Δ
		GND PART(S)	
E1	SNE1004-1	GND PLATE	
		FLAT CABLE (S)	
W3	RWJ0207210QQ	FLAT CABLE (7P)	
W4		FLAT CABLE (4P)	
N5		FLAT CABLE (10P)	
W6	<del></del>	FLAT CABLE (4P)	
N8	RWJ0210200KQ	FLAT CABLE (10P)	

Remarks

Notes : • Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
• Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM) , 1M=1,000k (OHM)

			71	1				,		
Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Val	ues & l	Remarks
			R61, 62	ERDS2TJ152	1/4W 1.5K	R566, 567	ERDS2TJ103	1/4W	10K	
		RESISTORS	R65	ERDS2TJ392T	1/4W 3. 9K	R569	ERDS2TJ105T	1/4W	1M	
			R67	ERDS2TJ103	1/4W 10K	R605, 606	ERD2FCVJ5R6T	1/4W	5, 6	Δ
R1, 2	ERDS2TJ394	1/4W 390K	R85	ERDS2TJ101	1/4W 100	R607, 608	ERDS2TJ102	1/4W	1K	
R3, 4	ERDS2TJ393	1/4W 39K	R91	ERDS2TJ124T	1/4W 120K	R611	ERD2FCVG100T	1/4W	10	Δ
R5, 6	ERDS2TJ183T	1/4W 18K	R93	ERDS2TJ273	1/4W 27K	R612	ERD2FCVG270T	1/4W	27	Δ
R9, 10	ERDS2TJ222	1/4W 2.2K	R94	ERDS2TJ123	-1/4W 12K	R613	ERDS2TJ102	1/4W	1K	
R11, 12	ERDS2TJ561	1/4W 560	R131, 132	ERDS2TJ104	1/4W 100K	R614	ERDS2TJ222	1/4W	2. 2K	
R13, 14	ERDS2TJ332	1/4W 3.3K	R133, 134	ERDS2TJ562	1/4W 5.6K	R615, 616	ERDS2TJ270T	1/4W	27	
R19, 20	ERDS2TJ101	1/4W 100	R135, 136	ERDS2TJ822	1/4W 8. 2K	R617, 618	ERQ16NKWR15E	1W	0. 15	
R21, 22	ERDS2TJ104	1/4W 100K	R137, 138	ERDS2TJ562	1/4W 5. 6K	R619-621	ERDS2TJ560T	1/4W	56	
R23, 24	ERDS2TJ101	1/4W 100	R144, 145	ERDS2TJ103	1/4W 10K	R623	ERDS2TJ560T	1/4W	56	
R25, 26	ERDS2TJ225	1/4W 2. ZM	R301	ERDS2TJ1RO	1/4W 1.0	R624, 625	ERDS2TJ270T	1/4W	27	
R27, 28	ERDS2EJ121	1/4W 120	R302, 303	ERDS2TJ183T	1/4W 18K	R631	ERD25FVJ2R7T	1/4W	2. 7	Δ
R29, 30	ERDS2TJ103	1/4W 10K	R304, 305	ERDS2TJ100	1/4W 10	R701	ERDS2TJ821	1/4W	820	-
R31, 32	ERDS2TJ273	1/4W 27K	R306	ERDS2TJ471	1/4W 470	R702	ERDS2TJ102	1/4W	1K	
R33, 34	ERDS2TJ183T	1/4W 18K	R307	ERDS2TJ561	1/4W 560	R703	ERDS2TJ122	1/4W	1. 2K	
R35, 36	ERDS2TJ474	1/4W 470K	R405, 406	ERDS2TJ122	1/4W 1. 2K	R704	ERDS2TJ152	1/4W	1.5K	
R37, 38	ERDS2TJ272T	1/4W 2.7K	R407, 408	ERDS2TJ562	1/4W 5. 6K	R705	ERDS2TJ182	1/4₩	1. 8K	
R43, 44	ERDS2TJ103	1/4W 10K	R409	ERDS2TJ333	1/4W 33K	R706	ERDS2TJ222	1/4W	2. 2K	
R45, 46	ERDS2TJ223	1/4W 22K	R410	ERDS2TJ103	1/4W 10K	R707	ERDS2TJ332	1/4W	3. 3K	
R47, 48	ERDS2TJ472	1/4W 4.7K	R551-556	ERDS2TJ473	1/4W 47K	R708	ERDS2TJ472	1/4W	4. 7K	
R49, 50	ERDS2TJ122	1/4W 1.2K	R557, 558	ERDS2TJ220T	1/4W 22	R713	ERDS2TJ821	1/4W	820	
R51, 52	ERDS2TJ330	1/4W 33	R559, 560	ERDS2TJ152	1/4W 1.5K	R714	ERDS2TJ102	1/4W	1K	
R53, 54	ERDS2TJ562	1/4W 5.6K	R561	ERDS2TJ102	1/4W 1K	R715	ERDS2TJ122	1/4W	1. 2K	
R55, 56	ERDS2TJ272T	1/4W 2.7K	R562	ERDS2TJ471	1/4W 470	R716	ERDS2TJ152	1/4W	1. 5K	-
R57, 58	ERDS2TJ222	1/4W 2.2K	R563, 564	ERDS2TJ103	1/4W 10K	R717	ERDS2TJ182	1/4W	1. 8K	
R59, 60	ERDS2TJ472	1/4W 4.7K	R565	ERDS2TJ105T	1/4W IM	R718	ERDS2TJ222	1/4W	2. 2K	na ar use v

Ref. No.	Part No.	Val	lues & Remarks	Ref. No.	Part No.	Vai	lues & Remarks	Ref. No.	Part No.	Va	lues & Remarks
R719	ERDS2TJ332	1/4W	3. 3K	R964	ERDS2TJ184T	1/4W	180K	C307, 308	ECCR1H221K5	50V	220P
R720	ERDS2TJ472	1/4W	4. 7K	R965	ERDS2TJ103	1/4W	10K	C309	ECKR1H103ZF5	50V	0. 01U
R721	ERDS2TJ682T	1/4W	6. 8K	R966	ERDS2TJ223	1/4W	22K	C310	ECKR1H472KB5	50V	4700P
R722	ERDS2TJ123	1/4W	12K	R967	ERDS2TJ821	1/4W	820	C331	ECKR1H103ZF5	507	0. 01U
R852	ERD2FCVG470T	1/4W	47 ⚠	R968, 969	ERDS2TJ472	1/4W	4. 7K	C409, 410	ECEA50ZR68	50V	0. 68U
R901	ERDS2TJ103	1/4W	10K	R973	ERDS2TJ472	1/4W	4. 7K	C413-416	ECEA1EKA4R7B	25V	4. 7U
R902	ERDS2TJ822	1/4W	8. 2K	R979	ERDS2TJ153	1/4W	15K	C551, 552	ECEA1CKA100B	16V	10U
R903	ERDS2TJ393	1/4W	39K	R980-985	ERDS2TJ393	1/4W	39K	C553, 554	ECEAOJKA101B	6. 3V	100U
R904, 905	ERDS2TJ222	1/4W	2. 2K	R986	ERDS2TJ103	1/4W	10K	C555	ECKR1H103ZF5	50V	0. 01U
R906	ERDS2TJ103	1/4W	10K	R990	ERDS2TJ100	1/4W	10	C556	ECEAOJKA101B	6. 3V	100U
R907	ERDS2TJ563	1/4W	56K	R994	ERDS2TJ102	1/4W	1K	C557	ECEA1EKA4R7B	25V	4. 7U
R908-910	ERDS2TJ103	1/4W	10K	R995, 996	ERDS2TJ100	1/4W	10	C558	ECEA1HKA010B	50V	1U
R911	ERDS2TJ392T	1/4W	3. 9K	R997	ERDS2TJ562	1/4W	5. 6K	C559	ECKR1H103ZF5	50V	0. 01U
R912	ERDS2TJ222	1/4W	2. 2K	R998	ERDS2TJ100	1/4W	10	C561	ECKR1H103ZF5	50V	0. 01U
R913	ERDS2TJ271	1/4W	270	1	5.50510100	27 2		C601	ECKR2H682PE	500V	6800P
R914	ERDS2TJ681	1/4W	680	1		CAPACI	TORS	C602, 603	ECA1EM102B	25V	1000U
R915	ERDS2TJ473	1/4W	47K	<b> </b>		ON NOT	TOILD	C604, 605	ECKR1H103ZF5	50V	0. 01U
R916	ERDS2TJ272T	1/4W	2. 7K	C1-3	ECEA1HKA010B	50V	1U	C604, 603	ECEA1AKA221Q	10V	220U
R917, 918	ERDS2TJ103	1/4W	10K	C5, 6	ECEA1CKA220B	16V	22U	C608, 609	ECKR1H103ZF5	50V	0. 01U
R919	ERDS2TJ471	1/4W	470	C7-10	ECBT1H561KB5	50V	560P	C610, 611	ECEA1AU102B	10V	1000U
R920-922	ERDS2TJ103	1/4W	10K	C11, 12	ECBT1H102KB5	50V	1000P	C612	ECEA1EU222B	25V	2200U
R920-922	ERDS2TJ100		10	1	<del> </del>	6, 3V	1000P	C613		50V	47U
<del></del>		1/4W		C13, 14	ECEAOJKA101B			<b></b>	ECA1HM470B	-	
R924	ERDS2TJ103	1/4W	10K	C15, 16	ECQB1H682JZ3	50V	6800P	C618, 619	ECFR1E104ZF5	25V	0. 1U
R925	ERDS2TJ223	1/4W	22K	C17-20	ECEA1EKA4R7B	25V	4. 7U	C901	ECAOJM222B	6. 3V	2200U
R926	ERDS2TJ100	1/4W	10	C21	ECEAOJKA101B	6. 3V	100U	C903	ECEA1HKA010B	50V	1U
R927	ERDS2TJ223	1/4W	22K	C25, 26	ECEA1EKA4R7B	25V	4. 7U	C904	ECEA1EKA4R7B	25V	4. 7U
R928	ERDS2TJ273	1/4₩	27K	C27, 28	ECBT1H561KB5	50V	560P	C907	ECKR1H103ZF5	50V	0. 01U
R931	ERDS2TJ102	1/4W	1K	C29, 30	ECKR2H101KB5	500V	100P	C912	ECKT1H122KB	50V	1200P
R932	ERDS2TJ392T	1/4W	3. 9K	C31, 32	ECBT1H181KB5	50V	180P	C915	ECBT1E103ZF	25V	0. 010
R933	ERDS2TJ472	1/4W	4. 7K	C33, 34	ECEA1HKAR47B	50V	0. 47U	<b> </b>			
R934	ERDS2TJ105T	1/4W	1M	C35, 36	ECQB1H472JZ	50V	4700P				
R935	ERDS2TJ182	1/4W	1. 8K	C37, 38	ECQB1H223JZ3		0. 022U				
R938, 939	ERDS2TJ472	1/4W	4. 7K	C39, 40	ECQB1H103JZ	50V	0.010	<u> </u>			
R941	ERDS2TJ102	1/4W	1K	C41, 42	ECQB1H223JZ3	50V	D. 022U				
R943	ERDS2TJ223	1/4W	22K	C43, 44	ECQB1H153JZ	50V	0. 015U				
R945	ERDS2TJ103	1/4W	10K	C45, 46	ECBT1E103ZF	25V	0.01U				
R948	ERDS2TJ184T	1/4W	180K	C49, 50	ECEA1CKA100B	16V	10U				
R949	ERDS2TJ103	1/4W	10K	C53, 54	ECQV1H563JZ3	50V	o. 056U				
R950	ERDS2TJ332	1/4W	3. 3K	C55	ECBT1E1032F	25V	0.01U				
R951	ERDS2TJ103	1/4W	10K	C57, 58	ECEA1AKA470B	10V	47U				
R952	ERDS2TJ392T	1/4W	3. 9K	C63	ECEA1CKA100B	16V	10U				
R953	ERDS2TJ103	1/4W	10K	C64	ECEA1HN010	50V	1U				
R954	ERDS2TJ223	1/4W	22K	C71, 72	ECBT1H391KB5	50V	390P				
R955	ERDS2TJ821	1/4W	820	C73, 74	ECBT1C472KR5	16V	4700P	1			
R956	ERDS2TJ223	1/4W	22K	C81, 82	ECBT1H4R7KC5	50V	4. 7P	1			
R957	ERDS2TJ821	1/4W	820	C135, 136	ECQB1H822JZ	50V	8200P				
R958	ERDS2TJ223	1/4W	22K	C137, 138	ECQB1H153JZ		). 015U				
R959	ERDS2TJ821	1/4W	820	C301	ECQP1153JZ		). 015U	1			
R960	ERDS2TJ153	1/4₩	15K	C302	ECEA1CKA101B	16V	100U	1			
R961	ERDS2TJ221	1/4W	220	C303	ECKR1H392KB5		3900P	<b> </b>			
R962	ERDS2TJ103	1/4W	10K	C304, 305	ECKW1H222KB5		2200P				
								<b> </b>			
R963	ERDS2TJ392T	1/4W	3. 9K	C306	ECKD1H682KB	507	6800P	]	j .		

RS-X102 RS-X102 RS-X102 **EXPLODED VIEW** Notes : \* Import Compon • Cabinet parts

Mechanism Unit (DECK I)

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Mechanism Unit (DECK 2)

**■** REPLACE

compon \* The pa Parts

Ref. No.	Part No.
1	DIM20007
2	RHD30007 RKMD024-2K
3	RYF0104B-K2
4	RYF0105A-K2
5	XTBS3+8JFZ1
6	RGR0102A-B
6	RGR0102A-D
7	RFKJTX302LE
7-1	RKA0011-2
8	RKQ0089
9	RFKNSDN7AK
10	RFKNSDN7BK
11	RMN0135
12	RFKGSX102E-
12-1	RKW0165-K
13	RGU0070
14	RGU0453-K
15	RGU0602-K
16	RGU0459A-K
17	RFKNSX102E-
18	RGW0098-K
19	RKF0169A-K
19-1	QBP2006A
20	RMA0159-1
21	RMAD373
22	RME0068-1
23	RML0185-1
24	RML0186-1
25	RMM0041
26	XTBS26+10J
27	XTB3+10JFZ
28	XTB3+20JFZ
P1	RPG0842
P2	RPN0383-1
P3	SPSD152
P4	SPP756
1.1	Direct
A1	RQF1081
A1	RQF1082
<u></u>	Indi 1002

T601 Power Transformer

CPI

Note: When changing mechanism parts, apply the specified grease to areas marked "XX" as shown in the drawing.

A FLOIL AK-152 SZZOL 18

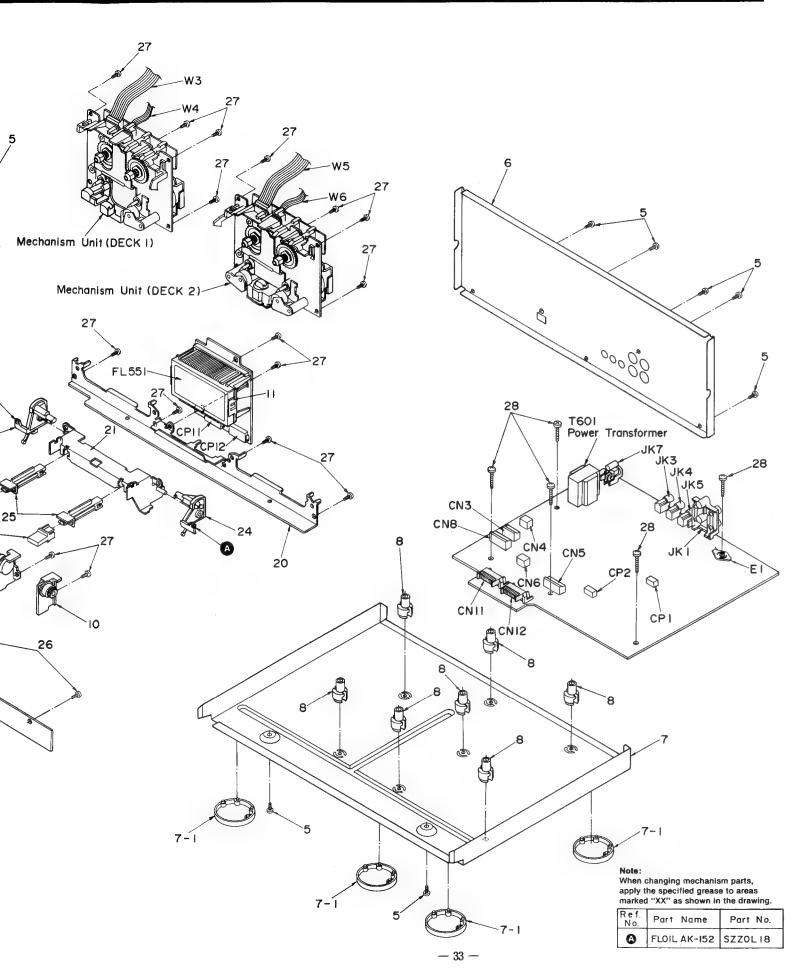
Part No.

Part Name

CN3

CNII

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#### **REPLACEMENT PARTS LIST**

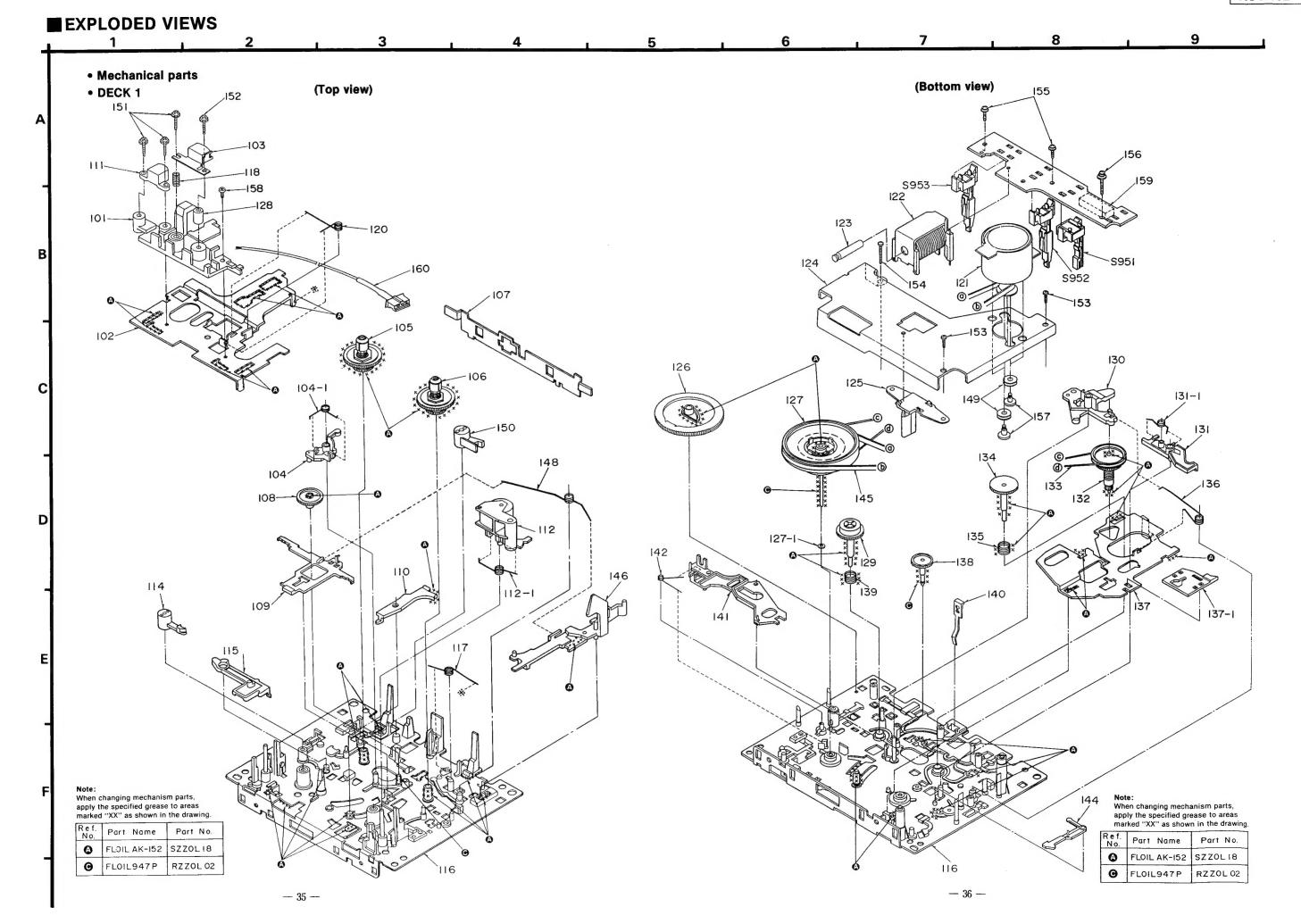
Notes: \* Important safety notice:

Components identified by △ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

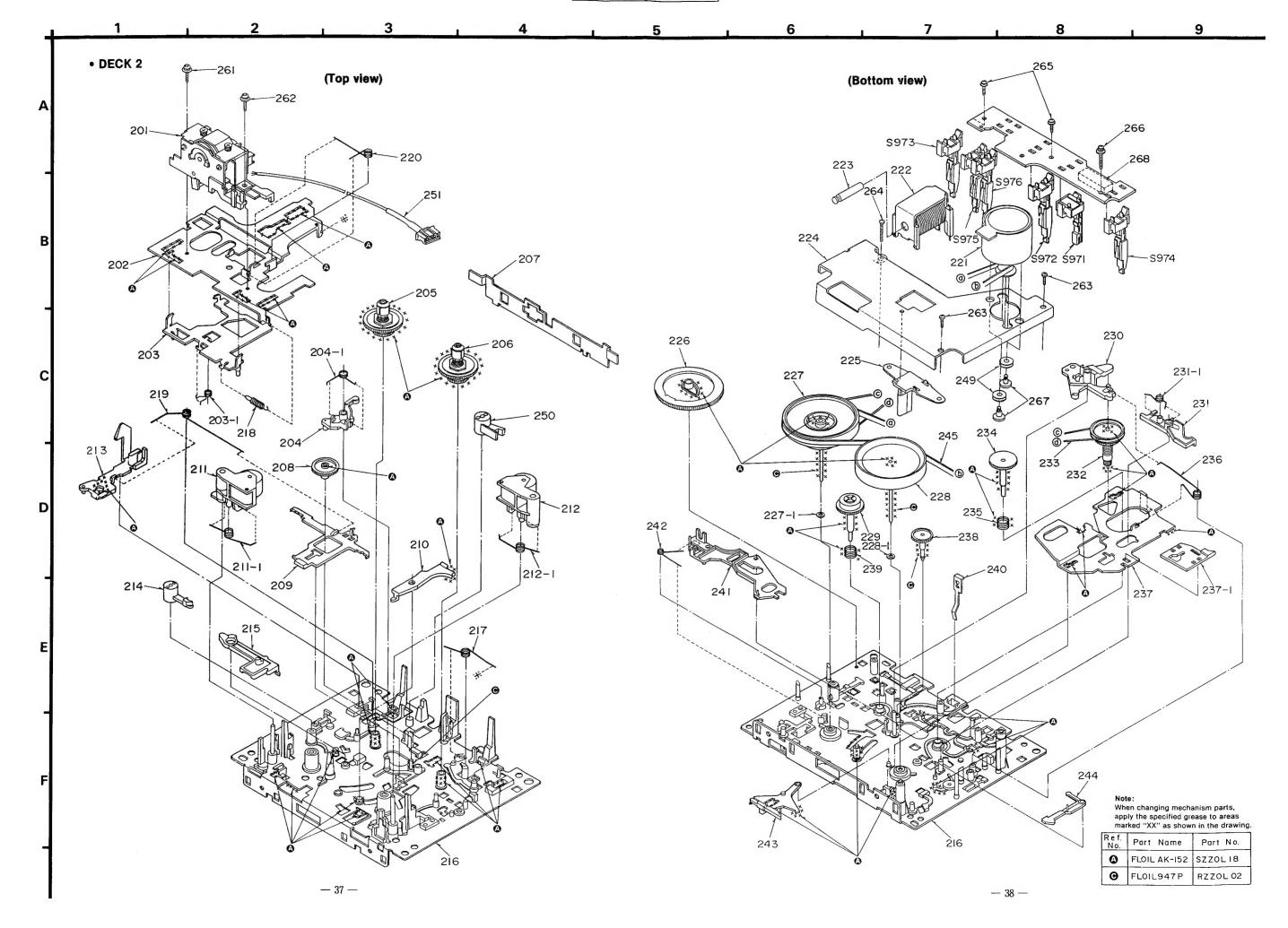
\* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)

Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
				A1	RQF1083	INSTRUCTION MANUAL UNIT	(EG)
		CABINET AND CHASSIS		A1	RQF1084	INSTRUCTION MANUAL UNIT	(GC)
				A1	RQF1085	INSTRUCTION MANUAL UNIT	(GN)
1	RHD30007	SCREW		A1-1	RFKSUX102E-K	INSTRUCTION MANUAL ASS'Y	(E)
2	RKM0024-2K	CABINET		A1-1	RQT0986-G	INSTRUCTION MANUAL	(GC)
3	RYF0104B-K2	CASSETTE LID(DECK1)		A1-1	RQT0988-B	INSTRUCTION MANUAL	(EB, GN)
4	RYF0105A-K2	CASSETTE LID(DECK2)		A1-1	RQT0989-D	INSTRUCTION MANUAL	(EG)
5	XTBS3+8JFZ1	SCREW		A1-2	RQAD013	WARRANTY CARD	(E, EB, EG)
6	RGRO102A-B	REAR PANEL	(E, EB, GC, GN)	A1-2	SQX7186	WARRANTY CARD	(GN)
6	RGRO102A-D	REAR PANEL	(EG)	A1-3	RQCB0169	SERVICENTER LIST	
7	RFKJTX302LEK	BOTTOM BOARD ASS'Y		A2	REX0346	3-CORE FLAT CABLE	
7-1	RKA0011-2	FOOT		A3	SJP2249-3	STEREO CONNECTION CABLE	
8	RKQ0089	P. C. B. HOLDER		A4	SJP2257T	L-TYPE CABLE	
9	RFKNSDN7AK	DAMPER GEAR ASS' Y(L)					
10	RFKNSDN7BK	DAMPER GEAR ASS' Y(R)					
11	RMN0135	FL HOLDER					
12	RFKGSX102E-K	FRONT PANEL ASS' Y					
12-1	RKW0165-K	TRANSPARENT PLATE					
13	RGU0070	BUTTON, EJECT					
14	RGU0453-K	BUTTON, DECK (POWER)					
15	RGU0602-K	BUTTON, OPERATION (DECK1)					
16	RGU0459A-K	BUTTON, OPERATION (DECK2)					
17		BUTTON ASS' Y COUNT. /SYNC.					
18	RGW0098-K	KNOB, REC LEVEL					
19	RKF0169A-K	CASSETTE HOLDER					
19-1	QBP2006A	TAPE PRESSURE SPRING					
20	RMA0159-1	MECHANISM ANGLE					
21	RMA0373	EJECT ANGLE					
22	RME0068-1	SPRING					
23	RML0185-1	EJECT LEVER(L)					
24	RML0186-1	EJECT LEVER (R)					<u> </u>
25	RMM0041	EJECT ROD			<del>                                     </del>		<del> </del>
26	XTBS26+10J	SCREW					
27	XTB3+10JFZ	SCREW					
28	XTB3+20JF2	SCREW					
	AIDO EGGI Z	DOILE II					
		PACKING MATERIAL					
		TOWNING BELLEVILLE					
P1	RPG0842	CARTON BOX					
P2	RPN0383-1	PAD			-		<del>                                     </del>
P3	SPSD152	ACCESSORIES BOX				***************************************	
P4	SPP756	PROTECTION COVER	-		<del> </del>		
r •s	OFF/30	LUOTECTION COACH					
		AGGEGGODIEG					
		ACCESSORIES					-
			(-)				
<u>\1</u>	RQF1081	INSTRUCTION MANUAL UNIT	(E)				
1	RQF1082	INSTRUCTION MANUAL UNIT	(EB)				



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## REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
				148	RUW144ZA	SPRING	
		MECHANISM PARTS LIST		149	RHG3032ZA	RUBBER CUSHION	
				150	RNL180ZB	DAMPER ARM	
ECK1				151	QHQ1361A	SCREW	
01	RMD5013ZD	HEAD ANGLE		152	RHE5201ZA	SCREW	
102	RUA793YC	HEAD BASE		153	XTN26+7J	SCREW	
103	RJH4C35GYAM	PLAYBACK HEAD		154	RHE5203ZA	SCREW	
104	1UB0089ZA	ARM		155	XTW2+8S	SCREW	
104-1	RUW1 48ZA	SPRING		156	XYC2+JF16	SCREW	
105	1DM0005ZA	REEL TABLE (R)		157	RHD26002	SCREW	
106	1DM0017ZA	REEL TABLE (F)		158	XTN2+5F	SCREW	
107	RML0069-1	LEVER		159	RJS7T7ZA	CONNECTOR (7P), J951	
108	RDG5772ZC	GEAR		160	REX0060	LEAD WIRE BLOCK(3P)	
109	RUB508ZB	BRAKE ROD		11.00	Tu.Tu.Ooo	DEED WITE DECON(OI)	
110	RUB506ZB	ROCK LEVER		1			
111	RUG82ZA	DAMYE HEAD		1			
112	1UB0087ZA	ARM				-	
112-1	RUW140ZC	SPRING		1	-		
114	RNL1ZD	DAMPER ARM		1			
115	RUB503ZD	MAIN LEVER					
116	RZUAR300	CHASSIS		<b> </b>			
117	RUW142ZA	SPRING		<b>╢</b>			
118	QBC1278A	SPRING		┨┣───			
120	RUW139ZA	SPRING					
121				<b> </b>			
	RFM133ZA	DC MOTOR		1			
122	1UE0015ZA	PLUNGER					
123	RUB428ZE	MOVING IRON CORE		<b> </b>			
124	RUL1030YA	ANGLE					
25	RMD5014ZC	ANGLE		-			
26	RDG5927ZG	MAIN GEAR					
127	1DW0037ZA	FLYWHEEL (F)		ļ			
27-1	RNW139ZA	WASHER					
.28	RHM278ZA	SPACER					
29	1DG0006ZA	REEL TABLE GEAR					
30	RUB513ZD	ARM					
31	1UB0091ZA	LEVER					
	RUW146ZA	SPRING					
32	1DR0011ZA	MAIN PULLEY					
33	RDV90ZB	BELT					
34	RDG5769ZA	REEL TABLE GEAR					
		SPRING					
		SPRING	W				
		ROD					
		F. F. ROD					
	RDG5773ZB	GEAR					
	RUQ112ZA	SPRING					
40	RUS609ZC	TAPE PRESSURE SPRING					
41	RUB514ZC	LEVER					
42	RUW147ZA	SPRING					
		LEVER					
		CAPSTAN BELT					
		EJECT ROL (R)					

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
				241	RUB514ZC	LEVER	
		MECHANISM PARTS LIST		242	RUW147ZA	SPRING	
				243	RUB515ZA	LEVER	
ECK2				244	RUB509ZA	LEVER	
01	RXQ0019	HEAD BLOCK (REC. /PLAYBACK)		245	RDV108ZA	CAPSTAN BELT	
02	RUA793ZF	HEAD BASE		249	RHG3032ZA	RUBBER CUSHION	
203	RZLAR300	ROD		250	RNL180ZB	DAMPER ARM	
03-1	RUW143ZA	SPRING		251	REX0059	LEAD WIRE BLOCK(5P)	
204	1UB0089ZA	ARM		261	XTW2+6L	SCREW	
204-1	RUW148ZA	SPRING		262	XTW2+8L	SCREW	
205	1DMO018ZA	REEL TABLE (R)		263	XTN26+7J	SCREW	
206	1DMD017ZA	REEL TABLE (F)		264	RHE5203ZA	SCREW	
207	RML0069-1	LEVER		265	XTW2+8S	SCREW	
208	RDG5772ZC	GEAR		266	XYC2+JF16	SCREW	
209	RUB508ZB	BRAKE ROD		267	RHD26002	SCREW	
	RUB506ZB	LEVER		268	RJS10T7ZA	CONNECTOR (10P), J971	
210	1UB0088ZA	ARM(R)		1	INDIOIT IN		
211		SPRING		┨├──	1		
211-1	RUW141ZA						
212	1UB0087ZA	ARM(F)					
212-1	RUW1402C	SPRING					
213	RUB541ZB	EJECT ROD (L)					
214	RNL1ZD	DAMPER ARM					
215	RUB503ZD	MAIN LEVER		_			
216	RZUSX980	CHASSIS		_			
217	RUW142ZA	SPRING		_			
218	RUD105ZA	SPRING					
219	RUW167ZA	SPRING		_			
220	RUW139ZA	SPRING					
221	RFM133ZA	DC MOTOR					
222	1UE0015ZA	PLUNGER		_			
223	RUB428ZE	MOVING IRON CORE					
224	RUL1030YA	ANGLE					
225	RMD5014ZC	ANGLE					
226	RDG59272G	GEAR					
227	1DW0037ZA	FLYWHEEL (F)					
227-1	RNW139ZA	WASHER					
228	1DW0038ZA	FLYWHEEL (R)					
228-1	RNW1 38ZA	WASHER					
229	1DG0006ZA	REEL TABLE GEAR					
230	RUB513ZD	ARM					
231	1UB0091ZA	LEVER				·	
231-1	RUW146ZA	SPRING					
232	1DR0011ZA	MAIN PULLEY					
233	RDV90ZB	BELT					
234	RDG5769ZA	REEL TABLE GEAR					
235	RUQ111ZB	SPRING		1			
236	RUW145ZA	SPRING					
237	1UB0090ZA	ROD					
237-1	RUB512ZB	F. F. ROD			1		
237-1					-		
	RDG5773ZB	GEAR			-		
239 240	RUQ112ZA RUS609ZC	SPRING TAPE PRESSURE SPRING			-	-	